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Miracle or Mirage?

Al Gore: Education for Science

Richard Dawkins: The 'Awe' Factor

Evry Schatzman: A Threat to Science

Martin Gardner: E-Prime and Isness

Donald Tarter: Safe Science with SETI

CSICOP Dallas Conference

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HELP US DEFEND SKEPTICISM AGAINST HARASSING SUITS

CSICOP LEGAL DEFENSE FOUNDATION

In the Winter 1992 issue of the SKEPTICAL INQUIRER we outlined the difficulties that the Committee for the Scientific Investigation of Claims of the Paranormal is experiencing because of harassing lawsuits filed against skeptics.

We feel confident that these suits will eventually be dismissed. Still, we suspect that the lawsuits were brought for reasons other than the redress of alleged grievances.

For what do these suits mean? They mean that the pro-paranormalists think they have finally found a way to strike below the belt of scientists and skeptics. For years they have been unable to prove their claims of miraculous abilities. They've grown tired of hearing our challenges. Now they have turned to intimidation by lawsuit in an effort to silence their only persistent critics.

It doesn't necessarily matter if the plaintiff wins or loses the suit. Their purpose is to waste their opponents' resources and to intimidate and silence them—in effect, depriving individuals or organizations of their First Amendment rights.

We are by no means a wealthy organization, but we are not prepared to surrender our rights. *We have vowed to fight back.* To do so, we need your support. CSICOP has established the CSICOP Legal Defense Foundation. Its funds will be used to help pay the costs of existing lawsuits and any that may arise in the future, and to countersue when appropriate.

Don't allow the claim-mongers to destroy CSICOP (and the values of science and reason it steadfastly represents) through unjust and frivolous legal proceedings. Support the CSICOP Legal Defense Foundation today. It's the best way to blunt this frightening new weapon of the apostles of nonsense.

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Scholars Focus on Cultures in Collision, In and Out of Science

ELENA M. WATSON

Ushered in by a tremendous Texas thunderstorm, the 1992 conference of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) took place at the Harvey Dallas/Fort Worth Airport Hotel October 16 to 18. Local hosts were the North Texas Skeptics. The conference was titled "Fairness, Fraud and Feminism: Culture Confronts Science," and as in the previous year, the convention focused broadly on the importance of scientific literacy. But this time there were fewer difficult choices to make, with the only concurrent sessions (on the

CSICOP Chairman Paul Kurtz opens the conference, as Bernard Ortiz de Montellano, Joseph Dunbar, Eugenie Scott, and Diana Marinez wait to begin their session on multicultural approaches to science.

second day) pitting claims of crashed saucers against the paranormal in China. The first day was devoted to multicultural and gender issues, with the next morning's topic being fraud in science. Richard Dawkins, noted author of *The Blind Watchmaker* and *The Selfish Gene*, delivered the keynote address on Friday evening.

A huge Texas "gully-washer" hit the area the night before the conference began, providing hail, lightning, and flash flooding. Many flights were delayed at the airport, and the ceiling above the Prometheus Books display began to leak. Luckily, fast action by both the CSICOP and Harvey staffs saved the books. Saturday morning brought yet another surprise, an early morning evacuation of the first and second floors of the hotel because of a fire alarm that fortunately proved to be spurious.

What's Good and What's Bad About Multiculturalism

CSICOP's founder and chairman, philosopher Paul Kurtz, opened the conference on Friday (October 16), prior to the first session, "Multicultural Approaches to Science: The Good, the Bad, and the Ugly." He spoke briefly on the history of skepticism and emphasized the need for inquiry, upon which the pragmatic "new skepticism" promoted by CSICOP is based. Reflective thinking requires reason and evidence and is the hallmark of the "educated mind," Kurtz said. He also noted the importance of the skeptical approach in critical thinking, which should be used "in all areas of human endeavor."

Eugenie Scott, executive director of the National Center for Science Education, Berkeley, California, built on these remarks as moderator of the multiculturalism session, pointing out that she believes in objective reality, which is important to the scientific approach. ("Either the earth or the sun is at the center of the solar system, not both.") In terms of history, this means that events really occurred and that, in theory at least, we can determine what really happened. ("Either Lee surrendered to Grant or Grant to Lee—not both.")

Two current trends, the Deconstructionist approach, in which all knowledge is considered relative, and the Politically Correct (PC) approach, in which the consequences of ideas are considered more important than reality, are currently slipping into the educational system and undermining this method. Scott offered several examples from that hotbed of PC thinking, the Berkeley area, where textbooks have endorsed PC views on American Indians. There, because of Native American spiritual belief in a North American creation, references to the early migration via a land bridge have been deleted from the schoolbooks. Or, worse, the books state that there is "no evidence of such a migration." Scott fears these practices will result in minorities' becoming further estranged from the educational system when they discover they have been taught untruths.

Diana Marinez, professor of biochemistry at Michigan State University, spoke on the importance of multiculturalism in science. Most science is taught as objective and isolated from culture, but Marinez argued that it does not have to be that way. And, she explained, as the work force rapidly changes, more women and minorities are needed to fill jobs, jobs that will be more science-based. The problem is that, statistically speaking, minorities are less likely to

go on to higher education. Only 55 percent of Chicano children graduate from high school. "There is a 50 percent drop at every level for minorities," she said. Other concerns are that "kids think scientists are weird nerds" and that Chicanos have been stereotyped as "unscientific."

To counter this she proposed teaching kids examples of Mexican-American contributions to science. "The materials and resources are available," according to Marinez, even if they are not always easily accessible. Some of the examples she gave: use Mesoamerican metal work to teach chemistry, incorporate the very visual base-20 Mayan math with standard mathematics, and in biology classes discuss the food plants of the New World, such as potatoes, chocolate, and corn.

Joseph Dunbar, a Wayne State University physiology professor, gave examples of a bad multicultural approach, that of the "melanin scholars." He began by explaining that, in an attempt to incorporate contributions of many different groups, researchers often try to go back and sort out who contributed what knowledge when. And since skin color is often a way ethnic divisions are made, there are some who think that skin color contributes particular characteristics. The melanin scholars take this to the extreme. They make certain extraordinary claims about alleged positive advantages of a high level of skin pigment, or melanin. These claims include an ability for melanin to convert energy to light and sound, to convert sunlight to knowledge, to protect against mutations, to give one extrasensory perception (ESP), and to interact with addictive drugs. Dunbar discussed each claim in detail, and it became apparent that scientific findings were being misapplied in support of these extraordinary assertions. In the case of melanin converting light to knowledge, for example, the studies cited in support of this assertion refer to the reaction of the melanin molecule to light, not to the abilities of people. Likewise, the ESP claims are based on the amount of melanin in the nervous system, but neuromelanin is different from and not correlated with skin melanin.

Bernard Ortiz de Montellano, a professor of anthropology, also at Wayne State, continued in a similar vein as he discussed the *Portland Baseline Essays*. This "Afro-centric" approach to teaching science is heavily influenced by the work of the melanin scholars. Montellano wrote on both these subjects in his two-part article in *SI* on multicultural pseudoscience (Fall 1991 and Winter 1992). Multiculturalism is too important to be left to the crackpots, he said. He also noted that the problem with any "centric" approach is that it denigrates everyone else.

One of the basic suppositions of the Portland essays is that ancient Egyptians were black and that they discovered everything. The pseudoscientific melanin theories are used to explain how they did this. Of even more concern is the fact that use of the *Portland Baseline Essays* is widespread, and this curriculum is being incorporated by many cities as an Afro-centric approach to teaching science. Montellano sees two problems with this: these essays could ruin it for all multicultural approaches to teaching science, and they are teaching scientific illiteracy. "The essays push the idea that the paranormal and religion are part of the scientific paradigm," he says, and cites examples from the essays. One credits the

Egyptians with a superior "transmaterial" science that is beyond the cause and effect of Western material science. According to the essays, the Egyptians used psi (psychic powers) as a scientific discipline and employed professional psi engineers. The essays also credit the Egyptians with discovering evolution 2,000 years before Darwin and with being able to fly in glider planes. A small model of one of the gliders is in fact a bird carving, and its wingspan would have been too narrow to actually fly. This is one of the examples Montellano gives of how a political agenda can distort even simple facts. And once again, the people most hurt by the teaching of such nonsense will be the minority students.

Gender Issues in Science and Pseudoscience

The second day's session, "Gender Issues in Science and Pseudoscience," proved to be every bit as lively as the first. Moderator James Alcock (York University, Toronto) opened the session by reminding the audience that parapsychology can be traced back to spiritualism and the young Fox sisters, and that many of the most famous spiritualists and mediums were women, as were most accused witches. More recently, we find that many New Age channelers are women. The question Alcock poses is why?

Carol Tavris, a psychologist and author of *The Mismeasure of Woman*, began with a few questions of her own. For starters, she wanted to know why "feminism" was used in the conference title, "Fairness, Fraud and Feminism," as if it were some loony phenomenon "right up there with crop circles." "There are loony feminists," Tavris said, "but there are also loony Republicans, loony scientists. . . ." All of us bring our own biases with us, she pointed out, but in "feminist science" this bias is more easily seen than in "normal science." This led to her next question, "If man is the measure of all things, where does woman fit in?"

According to Tavris, traditional science has a male point of view that often allows a sexual dichotomy to be set up. This gives many people the idea that men and women are opposites. As an example, she briefly mentioned the current men's movement inspired by Robert Bly and quipped, "But women don't want Iron John, they want Ironing John!" Even though science is intended to be objective, Tavris said, it can sometimes be used to confirm bias. Two current instances of this, she said, are the chauvinist or "normal" view, in which women are seen as the problem, and the feminist view, in which women are seen as not only different from men, but better. In the first instance, the assumption is of male normalcy. Women are therefore often assumed to have low self-esteem and to be less self-confident, rather than men being seen as arrogant and overconfident. But, she said, the case of the so-called "eco-feminists" is just as distorted. There is no evidence that women are more peace-loving or earth-loving than men. According to Tavris, "Women were just as likely to support the KKK; who do you think made those dopey costumes?" Gender gaps widen and narrow with politics, and the "woman is better" school of thought once again assumes a sexual dichotomy. This excludes the middle ground, which is where most people fall.

But the studies that emphasize the differences between the sexes get

most of the attention, such as the theories involving brain differences in men and women. Tavris said that when one researcher looked at the original data on hemispheric specialization she found it applied to rat brains, not humans. Likewise, Tavris stated that most brain lateralization theories have been based on studies that were small and inconclusive. In general, not only do assertions involving gender differences keep changing, but studies with more convincing evidence of gender *similarities* rarely get published. This often leads to a polarization of the sexes. Tavris suggests that we not look at sex differences as permanent and unchanging. Other aspects of people's lives, such as environment, should also be considered. Because, she asked, "who benefits from this polarization?"

Carol Ann Tavris: Attacking stereotypes on both sides, about gender differences *and* similarities.

Psychologist Susan Blackmore (University of the West of England, Bristol), also opened with a question: "Why are so few members of CSICOP women?" While admitting that this trend is general to all science, she concluded that this was not the only reason, because even fewer women are skeptics. Blackmore then addressed the next question: "Are more women 'believers'?" The common stereotype is that women do believe more, so Blackmore took a look at surveys of both experience and belief in the paranormal. In many of the studies dealing with experience she found no gender differences, although a few studies indicated some difference. Differences were more apparent in studies dealing with belief. Blackmore found fewer men than women indicated belief in ESP. However, she found that the wording of the question could indicate a bias. And the overall sex differences were small enough for Blackmore to seek a better answer. She suggested the possibility that the kind of science CSICOP does is not particularly attractive to women. And while science in general is considered masculine, she examined the characteristics of stereotypical masculine science versus those of stereotypical feminine science. The first seeks to conquer and control, is objective and predictive, and sets up dichotomies. Feminine science, on the other hand, is more concerned with discovery and participation. It is subjective, understanding, and continuous.

Using an example from parapsychology, Blackmore pointed out that science has to be open to results it doesn't like. She cited a 1990 experiment using the ganzfeld technique in which positive results were obtained, even after researchers had worked with skeptics to eliminate flaws that had skewed earlier experiments of that type. Blackmore concluded with a warning against setting up dichot-

omies in science.

The session's last speaker, sociologist Steven Goldberg (City College, CUNY), author of *The Inevitability of Patriarchy*, began by stating that science is neither good nor bad, but empirical. "Science has a commitment to the truth," he said. It is the fact that is important, said Goldberg; whether it is good or bad is not a scientific question. He also pointed out that scientific truths are statistical truths, and he gave as an example of polarity the height differences between men and women. The mean difference is slight, but at the extremes it can be great. (Most of the world's tallest people are men.) Goldberg also pointed out that differences get the most attention simply because differences are more interesting. In 1932, for example, Margaret Mead wrote about a tribe in New Guinea in which the sex roles were reversed. This was, in fact, an exaggeration, and one that Mead later readily admitted. However, even years later many textbooks still referred to this opposite-sex-role tribe as an example of matriarchy. Goldberg said that even though there is nothing that isn't a male or female job somewhere, and each society varies, some things are the same. And in his search for a true matriarchal society he found none. Instead, he found that all societies are patriarchal; whatever is given high status in a society is masculine, with males being drawn to what is high status; and that male dominance is prevalent because of greater male aggressiveness. He cited hormonal research in support of the last statement. Female animals that were experimentally masculinized, and human females who were mistakenly masculinized neonatally, both show more aggressive behavior. Societies, says Goldberg, get their direction from biology. Social environment is not an independent variable, but a dependent variable. But, cautioned Goldberg, one can't go from science to what *should* be; "should" is not a scientific question, and science does not deal with morality.

Time Out for the News

Several other events took place on Friday. Among them were a CSICOP Press Luncheon, held between the two sessions; a presentation by televangelist watchdog Ole Anthony, also at noon; and that evening, the Keynote Address (see box). Anthony's presentation was sponsored by the North Texas Skeptics, who also provided daily convention updates in a newsletter. In this bonus session, Anthony discussed the work he did in helping ABC-TV's "Primetime Live" investigate Dallas faith-healer Robert Tilton. James ("The Amazing") Randi was also present and described similar work he did for his book *The Faith-Healers*.

In addition to the new media, CSICOP Fellows and Consultants also attended the press luncheon and, after a brief introduction by Chairman Paul Kurtz, gave short summaries of the current state of their areas of expertise. Philip J. Klass, the "Socrates of UFOs," previewed the next day's session on crashed saucers and spoke briefly about the current abduction craze. Five years ago he thought UFO belief was a harmless myth. But that was before the "cult" of abduction began, with its missing time, bodily scars, and other so-called evidence that supposedly condemns one and one's offspring to a lifetime of alien abduction and impregnation. Klass said the prevalence and popularity of this belief indicates the power of the

Viruses of the Mind, and 'the Awe Factor'

Friday evening Richard Dawkins, the Oxford University zoologist, gave the 1992 CSICOP Conference Keynote Address. He began by describing how the human child is shaped by evolution to learn quickly, an advantage in learning one's culture, but a disadvantage in that it leaves young brains gullible. Dawkins then introduced an analogy between a computer "brain" virus and a human mind virus. The latter is information that is spread from one human to another, but does nothing useful except get passed along. A characteristic of such a virus of the mind is that it feels true, even when there is no evidence. Faith without this evidence is seen as a virtue, and myste ·y is considered a good thing, not something to be solved.

Richard Dawkins: The British zoologist and author delivered the keynote address on "Viruses of the Mind" and received CSICOP's In Praise of Reason Award.

These traits could describe any number of pseudoscientific beliefs, but Dawkins surprised some listeners by applying them to religion, using Roman Catholicism as an example. The next evening receiving CSICOP's 1992 In Praise of Reason Award at the Awards Banquet, Dawkins confessed to having been chided a bit for this example, as CSICOP doesn't usually deal with religious issues of faith unless scientific claims are being made.

Dawkins added that science could use better PR and that those within the scientific community should not devalue popularizers of science like Carl Sagan. He said it is important to motivate people to science the way they are motivated to religion. Dawkins also pointed out that there are two aspects of science, the critical and the wonder. The appeal of nonsense, such as UFOs, is romance, or wonder—something he referred to as "the awe factor." Dawkins said we should "exploit science as romance," and suggested that "black holes are more romantic than any pseudoscience."

—*E.M.W.*

Dawkins's remarks upon receiving CSICOP's In Praise of Reason Award appear on pages 242-243.

electronic media.

Joe Nickell discussed another media favorite, crop circles. The approach he took in his SKEPTICAL INQUIRER article on this subject (Winter 1992) was to look at crop circles as a phenomenon. When Nickell examined their development, he found the circles were intensifying in both number and complexity. As the media picked up on them, the "bandwagon" effect took over, and soon crop circles had a life of their own. Simple rings in farmers' fields gave way to satellites and even triangles and other shapes. And although the media widely reported the two hoaxers who confessed, Nickell said, many believers still exist.

Barry Beyerstein (Simon Fraser University, Vancouver, B.C.), addressed the more down-to-earth problem of graphology, or handwriting analysis. More organizations, he said, are turning to graphologists to help identify loyal, honest employees. Graphologists, who are different from document examiners, often claim to be 100-percent accurate, and they appeal to employers because this type of analysis can be done in secret. In the private sector one has little protection against graphology being used this way, Beyerstein pointed out. It is a frightening thought, he said, considering that most graphology depends on "sympathetic magic" and has limited validity.

Mario Mendez-Acosta, of the Mexican Association for Skeptical Inquiry, described a current Mexican cult belief that there are nearly 200 carnivorous alien species living on earth. There is also a widespread rumor in Mexico that during the Apollo moon-landing something terrible happened that was hidden from the public. Mendez-Acosta also commented that the public generally believes the media and has trouble discriminating between what is intended as humor and what is fact.

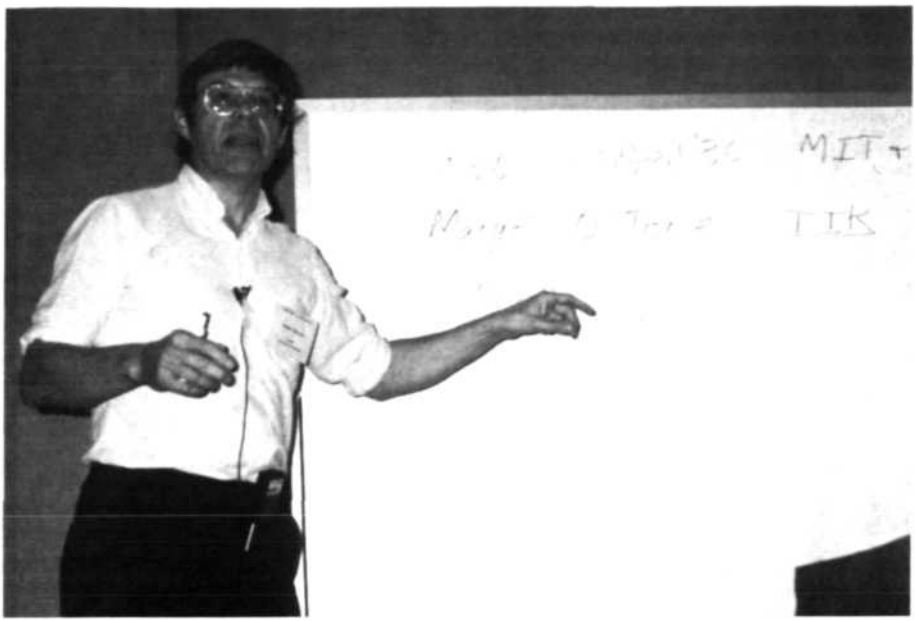
Eugenie Scott addressed the multicultural front. She said there is an anti-intellectualist undercurrent today that is allowing misinformation to seep into multicultural education—the Afro-centric Egyptian myths, melanin myths, and the American Indian origin controversy were cited in her conference session. She also noted an anti-science attitude present in Political Correctness.

SKEPTICAL INQUIRER editor Kendrick Frazier ended the luncheon by deploring the current trend in the media of blending news and entertainment. As readership declines, he said, newspapers struggle to capture their share of the market. Frazier referred to *SI* as "a gold mine of information" for the public, something few subscribers could deny.

Fraud in Science

Saturday's sessions dealt with topics as diverse as fraud in science, crashed saucers, and the paranormal in China.

Psychologist Ray Hyman (University of Oregon, Eugene), moderated the "Fraud in Science" session. He stressed the importance of replication, which makes science a self-correcting process. While this self-correcting aspect protects against fraud, he said, it doesn't rule it out. Hyman cited the problem of parapsychology, in which replication is uncommon, and briefly discussed the Piltdown hoax. The session organizer, Elie Shneour (Biosystems Research Institute, San Diego), pointed out that science does not so much deal with truth as with models that have predictive ability. And because the scientist can't start over with every experiment, he or she must rely on the work of others.



Fraud in science: Walter Stewart gives lively, detective-story recounting of the case involving biomedical researcher Teresa Imanishi Kari and whistleblower Margot O'Toole.

Because of this, Shneour noted, honesty is very important in science. Accusing a scientist of fraud could be devastating. However, fraud does occur and is not new. He gave some examples from history, that of Prosper Blondlot and N-Rays and the previously mentioned Piltdown case. Since World War II, noted Shneour, science has become somewhat of a bureaucracy, with research being "farmed" and graduate students becoming slaves to researcher "masters." At one time, he said, people went into science for love, not fame. But now there is more of a push to "publish or perish." And although Shneour said that fraud is rare, he offered several suggestions regarding journal publication. Researchers, he said, should take responsibility for everything published under their signature—even in what they cite. He said manuscripts should be given more scrutiny, and not just passed along (if not accepted) to the less prestigious journals.

Paul Friedman (University of California, San Diego, School of Medicine), based his comments on his own research in how to deal with fraud. Like Shneour, he maintained that deliberate fraud is rare, the biggest problem being messiness. Often a definition of research fraud depends on what area the research is done in, he said. Traditionally, according to Friedman, when fraud is suspected, it is dealt with quietly. And if something deliberate has gone on, generally people know about it. But if a senior researcher is involved, because of the fear of being wrong, no one will accuse him. The way experiments are written up, said Friedman, often makes science look more logical and neater than it really is. This can make fraud hard to detect at the journal level. Friedman

CSICOP's 1992 Awards

A highlight of the annual CSICOP conference is the Awards Banquet, where CSICOP honors distinguished scientists, journalists, and scholars for their efforts to educate and contribute to the public's understanding of science and the scientific method. On October 17, 1992, five eminent scientists and journalists were recognized by the following awards.

In Praise of Reason Award: Richard Dawkins, professor of zoology at Oxford University and author of *The Blind Watchmaker* and *The Selfish Gene*, "in recognition of his distinguished contribution to the use of critical inquiry, scientific evidence, and reason in evaluating claims to knowledge." Previous winners of this award were: Martin Gardner (1982), Sidney Hook (1984), Antony Flew (1985), Stephen Jay Gould (1986), Carl Sagan (1987), Douglas Hofstadter (1988), Cornelis de Jager (1990), Gerard Piel (1990), and Donald Johanson (1991).

Public Education in Science Award: Sergei Kapitza, editor of the Russian edition of *Scientific American* and member of the Russian Academy of Sciences, "in recognition of his distinguished contribution to the teaching of scientific principles and to the public understanding of science." Previous winners of this award were: Richard Berendzen (1990) and Eugenie Scott (1991).

Distinguished Skeptic Award: Evry Schatzman, former president of the French Physics Society and a member of the French Academy of Sciences, "in recognition of his outstanding contributions to the defense of science and critical thinking." Previous winners of this award were: Henri Broch (1990) and Susan Blackmore (1991).

Responsibility in Journalism Award: Andrew Skolnick, associate editor of Medical News & Perspectives for the *Journal of the American Medical Association*, and Henry Gordon, author, magician, and

said peer reviewers assume honesty and look for flaws in design and logic instead. Replication, a self-correcting mechanism of science, can help, but not in a case in which the answer is right but the work was never done. Friedman also emphasized that it is important to keep a balance between skepticism and trust and to remember that some work may be fraudulent because of the researcher's self-deception. There are some advantages to dealing quietly with suspected fraud, he said. One is that the suspicions could be unfounded; another is that the public's faith in science would not be shaken.

The session's last speaker, Walter Stewart (National Institutes of Health), has investigated several notorious cases of scientific fraud. He gave a lively and heartfelt presentation of his experiences, primarily detailing the case involving Nobel

International diplomacy: Lin Zixin (China), Paul Kurtz (U.S.), Sergei Kapitza (Russia), and Evry Schatzman (France) share a free moment before the evening Awards Banquet. All are CSICOP Fellows.

columnist, in recognition of their "outstanding contribution to fair and balanced reporting of paranormal claims." Previous winners of this award were: Davyd Yost (1984), Leon Jaroff (1984), Boyce Rensberger (1986), Ward Lucas (1986), Ed Busch (1987), Lee Dembart (1987), Michael Willesee (1987), Eugene Emery (1988), Milton Rosenberg (1988), Stephen Doig (1990), Keay Davidson (1991) and Mark Curtis (1991).

CSICOP in some years has given a *Frontiers of Science and Technology* Award. The winners were Paul MacCready (1986) and Murray Gell-Mann (1987).

—Barry Karr

laureate David Baltimore and colleague Teresa Imanishi Kari. He prefaced this spine-tingling episode by briefly mentioning the Darcy case, in which one scientist in just three years published about 150 papers, listing 47 different coauthors. When looking at the characteristics of the coauthors Stewart found that most were just sloppy and about one-third appeared to be dishonest.

The Baltimore case, which has more intrigue than a cheap novel, began in 1985, when a researcher working in Kari's lab, Margot O'Toole, tried without success to replicate Kari's published experiment. O'Toole later accidentally found the original data for the paper, but they did not agree with what had been published. This inaccuracy bothered her, so she made a copy of the original data. From here on, the story gets very complicated with a number of denials

and cover-ups. Although others privately agreed with O'Toole, that there was a problem with the data, it was O'Toole who found herself out of work. Baltimore supported Kari. Stewart said that when he asked Baltimore about the case, Baltimore said that Stewart could end up being humiliated. Even after Stewart's involvement in a congressional hearing on the case exposed a cover-up involving faked lab notebooks, no one went back to clear O'Toole's name. The scientific community generally sided with Baltimore, who stonewalled.

Stewart cited another example, in which the victim of fraud was punished and the man responsible promoted. The problem with fraud, he emphasized, is not so much that it hurts the body of science, but how it is handled in the field and the way whistleblowers are treated.

Clash over Crashed Saucers

The "Crashed Saucers" session was moderated by Philip J. Klass, former senior editor of *Aviation Week and Space Technology*, and began with James McGaha, a retired Air Force major, and Robert Young, education director of the Harrisburg Astronomical Society, discussing two cases recently dramatized on TV's "Unsolved Mysteries." Following them was Donald Schmitt, coauthor of *UFO Crash at Roswell*, who has investigated the allegation that the military recovered a crashed flying saucer from New Mexico back in 1947.

McGaha began with the "Woodbridge Visitation" case, which took place outside of the U.S. Air Force base at Woodbridge, England, on two separate December nights in 1980. "Unsolved Mysteries" called this the "best-documented" UFO case in U.S. Air Force history, based on a memo written by the base's deputy commander, Lieutenant Colonel Halt. McGaha pointed out that the memo was written two weeks after the incident happened and that it was directed to the Royal Air Force, not the U.S. Air Force.

The occurrence, which is confusingly treated in the book *Sky Crash*, involves lights in the woods, said to be from a saucer landing. It began on the night of December 26, 1980, when Airman Burroughs heard over the radio that something had been tracked on radar. He then saw a light. Thinking it was a crashed plane, he left to investigate the woods. There he saw what he described as a 10-foot triangular lighted object that seemed to fly through the forest. The next night, when lights were again seen, Halt and some security people joined the investigation. They found blinking lights in the trees and three bright lights in the sky.

"Unsolved Mysteries," McGaha complained, doesn't really want to solve mysteries. He cited a number of ways the case was presented in order to "not let facts get in the way of a good story." Fancy special effects were used to create a disk-shaped object, not the triangle described by Burroughs. Holes found in the ground the next day were shown as nice and neat, unlike the real ones. Most damning of all, after a three-hour interview with McGaha, the producers told him: "I don't know if we'll air this segment, because you just destroyed the case." When the segment did air, only 20 seconds of McGaha's interview were included. He gave facts about the case that "Unsolved Mysteries" left out: The holes were really dug by rabbits; the lights on the first night could be accounted for by the reentry of the

Cosmos 746 booster rocket and, at 2:50 A.M., by a fireball that appeared over Woodbridge. The triangular-shaped lights were most likely that of a police car that was searching the woods at about 4:00 A.M. The lights of the second night were from a nearby lighthouse, and the bright stars Sirius, Vega, and Deneb. In summarizing, McGaha attributed much of the confusion to magical thinking.

Robert Young presented another case that had received the "Unsolved Mysteries" treatment. The show claimed that in December 1965 an acorn-shaped UFO crashed and was recovered in Kecksburg, Pennsylvania (see his article in *SI*, Spring 1991). What was really seen was a very bright bolide, or fireball, just before sunset on December 9. It was seen over nine states and Canada. Young explained that people are often unable to accurately report surprising events of this sort. However, this fireball was widely photographed and is well documented. Young referred to a letter an astronomer had written to "Unsolved Mysteries" about this six months before the Kecksburg segment aired, offering to provide any information needed.

In Kecksburg an early witness of the meteor was a 10-year-old boy who described it as a star exploding. His mother saw the long tail and, after hearing a radio report of a suspected plane crash, called the station. The Air Force was then called, and since Project Blue Book was still active, three men were sent out. Soon various searches were made, and two roads were blocked off. On "Unsolved Mysteries" a huge military search was shown, along with firemen and police. In reality, Young estimates there were

The debate goes on: Donald R. Schmitt (*left*) and Philip J. Klass (*right*) continue in intense discussion after the conclusion of their session on crashed saucers. Associated Press reporter Robert G. Wieland listens in.

only about 25 state troopers. And no one ever found anything. In spite of this, "Unsolved Mysteries" claimed that a mysterious "capsule" was found and removed in the night. Young said that of all the reports on the case there are only five such "retrieval" stories. The first dates from 1979 and was told on a radio call-in show by a man claiming to have been the fire chief at the time of the sighting. He had actually been chief in 1964. Only two of the five stories mentioned witnesses who had allegedly seen the "acorn." One came forward during a 1987 UFO display at a local mall, and the other, while "Unsolved Mysteries" was in Kecksburg. Young also reported that 46 people from Kecksburg have signed a statement disputing the "Unsolved Mysteries" version of the incident, something never mentioned on the air.

Donald Schmitt, investigator for the J. Allen Hynek Center for UFO Studies, said he considered "Unsolved Mysteries" to be entertainment. He classified himself as agnostic on the UFO issue and said he was a skeptic about such things as UFO cults, cattle mutilations, alleged abductions, and the widely publicized Gulf Breeze case. Schmitt then addressed the 1947 Roswell case, first by reading from the early press reports. These refer to material found by a rancher in New Mexico as belonging to a flying disc and said the Army was in possession of the disc. But almost immediately these were corrected, saying that the wreckage belonged to a balloon-borne radar reflector. Schmitt said he had originally dismissed crashed-saucer claims. But learning that in 1988 a ranch hand from Roswell witnessed an Air Force radar truck leaving the original wreckage area and that the drivers had asked if that was where the UFO crashed in 1947, his suspicions were raised of a government cover-up. Schmitt discounted the balloon explanation. He claimed he has tracked down more than a hundred witnesses, with consistent stories about what was really found. Schmitt also hopes to find a nurse who supposedly helped with an "autopsy."

Philip Klass, also speaking about the Roswell case, began by saying he, like Schmitt, believes there is a crashed-saucer cover-up. But he quickly added that he disagreed with Schmitt on who is responsible. Once it is known that one is collecting crashed-saucer stories, Klass pointed out, story-tellers come out of the woodwork. Klass noted that Schmitt's book is only one of three concerning the so-called Roswell incident, and all three quote from the same letter by the commanding officer of Wright-Patterson Air Field, saying that the flying disc phenomenon is real. But all three books omit another part of the same letter, in which the general states there is no physical evidence of these discs.

Klass found it unbelievable that the commanding officer would not know if the base had recovered a flying saucer. Klass next gave the example of General Vandenberg, Air Force chief-of-staff, who, in 1948, after receiving an "Estimate of the Situation" secret report from the Air Technical Intelligence Center suggesting that UFOs were interplanetary, rejected it because of lack of evidence. Klass found it inconceivable that all the hundreds of "nobodies" in Roswell would know of the crashed saucer, but not the chief-of-staff. He continued in a similar vein, presenting more documents indicating that neither the government, including the CIA, nor the military had any information

A light moment: Susan Blackmore (*right*) seems to see the light after Ray Hyman does a "palm reading." The two psychologist members of the CSICOP Executive Council were relaxing Sunday after the conference. (Photos by Kendrick Frazier)

James Randi, with *SI* managing editor Doris Doyle. At the Saturday evening banquet, Randi recounted his famous Project Alpha and introduced Alpha participant Steve Shaw, who entertained the audience with an extraordinary "mentalism" performance.

about UFO crashes. Klass pointed out that two of the Roswell books give the wrong date for when the rancher, W. W. Brazel, came into town with the debris from the crash. He suggested the authors had adjusted the date to make it more compatible with memories of the witnesses.

This final conference symposium ended, inevitably, with many questions still unanswered. Even after the scheduled question session, Klass and Schmitt continued in intense discussion between themselves at the front of the auditorium, with reporters and others eavesdropping. By the time they quit, fully two hours later, the evening Awards Banquet was beginning in an adjacent ballroom, and the last listener had long ago left.

Our conference coverage this year is by Elena M. Watson, a writer in Norfolk, Virginia, and a member of the National Capital Area Skeptics.

The 'Awe' Factor

RICHARD DAWKINS

The following impromptu remarks by Richard Dawkins were made upon his receiving CSICOP's "In Praise of Reason" award at the 1992 CSICOP Conference in Dallas. Dawkins is professor of zoology at the University of Oxford and author of The Selfish Gene *and* The Blind Watchmaker.

Thank you very much indeed. I love being here. I love the kind of people who come here. You are, if I may say so, my kind of people. I feel a great intellectual comradeship with the skepticism that I find here. I cannot imagine a quality which I would rather be honored for than reason.

In your lunchtime speech, Mr. Chairman, you gently rapped me over the knuckles because of what I said about religion in my address last night. I gather that religion is off-limits to CSICOP. You only attack paranormal claims, and of course I understand this. Nobody would ever suggest, would they, that the Virgin Birth was paranormal? Or the healing waters of Lourdes? Or God himself! I have to leave the country tomorrow, so you don't have to worry too much about what I say. In light of that, I'd like to take the liberty of using the word *religion* to include *all* the stuff that you tackle—all the UFOs and astrology, spiritualism, levitation—everything.

The thing that shocked me the most during the two days of the conference was the revelation last night by James Kimberly [CSICOP's development officer] that 54 percent of American charitable donations go to religion. That is a truly horrifying figure. The second most shocking thing I learned about was some of the rubbish that is taught to primary-school children—the cult of Melanin, and so on. It really looks as though science and reason are under siege, and I empathize very much with what Sergei Kapitza said today about the need for the forces of science and reason to look to their public relations. I suppose I can claim to have devoted a lot of my career to trying to increase the public understanding of science.

I think that something more needs to be said about the attitude of the scientific establishment. We heard today, in Walter Stewart's fascinating talk about scientific fraud, some revolting stories about the way certain senior dignitaries in the scientific establishment closed ranks in order to stop whistle-blowers from rocking the boat. The very minor complaint that I have is a flea bite compared to this, but, for what it is worth, here it is. There is a tendency for people established in the world of science to undervalue those who devote themselves to the public understanding of science. People like Carl Sagan, because they have a high profile and are so good at publicizing science, tend to lose prestige to some extent as serious scientists. I think that sort of snobbery is the last thing we in the scientific and rational community can afford if we are under siege, as I think we are.

We were told today that Congress demands results, and that those kinds of scientific research that take a long time, or that don't show something immediately for their money, tend not

to get support. I cannot help contrasting the results that science has produced, in a very short time, with the results that religion has produced during the thousands of years that it has been going. Science puts men on the moon. It gets results. What results has religion ever obtained to justify the colossal number of dollars donated to it? If only we could somehow tap some of the motivation that turns people to religion, and turn it to science instead. The kind of spectacular demonstration that we can put on as scientists—curing smallpox, predicting eclipses to the fraction of a second—what an inspiring piece of public relations that constitutes compared with the pathetic damp squibs that religion has to offer.

I want, finally, to make a distinction between two aspects of science. One is the critical aspect, and that is what CSICOP excels at, preeminently. You are bringing the enormously powerful scientific method to bear upon all kinds of dubious superstitious claims, and I applaud you for it.

The other aspect of science, the one that I am more concerned with, is the wonder, the "awe factor." I ask myself, what is the appeal of religion, what is the appeal of UFOs, what is the appeal of von Däniken or Velikovsky, all that nonsense? I suspect that a part of it is the kind of awesome romance that science ought to be the master of. Don't let us allow religion to walk away with the awe factor. Science has orders of magnitude more to offer in this field. Black holes are incomparably more wondrous, more romantic, than anything you read in the pseudoscientific literature, in New Age drivel, in the "occult," in the Bible. Let's not sell science short.

Over and over during these two days I've heard the same depressing tale about broadcasters and television producers short-changing the skeptical point of view. Skepticism is apparently not seen as sexy by the media. When there's a UFO claim they will devote nearly all the airtime to the people who claim to have seen flying saucers and a negligible amount of time to the skeptics because somehow that is not a story; it's not exciting. Well science, in its awe-inspiring aspect, is a tremendous story. If only we could exploit the appeal of it we could sweep the board, because we have so much more to offer—in our accounts of the size, the number, the distance apart of the galaxies; the romance of geological deep time; the stupendous complexity of living organisms; their apparent "design," with its devastatingly simple and elegant Darwinian explanation. Compare these with the poky, parochial, medieval world-view that our opponents are purveying. Surely we should be capturing almost all of the awe factor that, I suspect, the religious camp is getting away with.

And, to become a bit mercenary about it, there's that 54 percent of the charitable donations! We should be able to at least shave off a bit of that 54 percent by putting the right amount of emphasis on the romance and the inspiring aspect of science, and not just on the critical, more typically "CSICOP " aspect. I suspect that this may have been partly what Professor Kapitza was getting at a moment ago.

I do care about, and do greatly value, the debunking aspect of what CSICOP does. But I personally intend to go on fighting the battle, on behalf of the scientific world-view, for the "awe factor."

I'm enormously honored to receive this award. I thank you very much indeed. □

Free Speech and SLAPP Suits

ANDREW SKOLNICK

The following remarks by Andrew Skolnick were made upon his receiving CSICOP's "Responsibility in Journalism" award at the 1992 CSICOP Conference in Dallas for his investigative reporting in the Journal of the American Medical Association *about the Maharishi Ayur-Veda products (see "The Maharishi Caper," SI, Spring 1992). Skolnick is associate editor for* JAMA's *Medical News and Perspectives department.*

At several previous CSICOP meetings, I watched with benign envy as outstanding journalists like Gene Emery, Boyce Rensberger, Lee Dembart, and Keay Davidson received this same Responsibility in Journalism award. The support that this award represents, from this unique committee—a committee of champions for free scientific inquiry, academic integrity, and the rule of reason—comes at a critical time. Like James Randi, like CSICOP, and like a growing number of others who have spoken critically of litigious parties, I have become the target of a multimillion-dollar lawsuit for writing the article that CSICOP honors tonight. I and my editor, George Lundberg, are being sued for almost $200 million—plus legal expenses. This amount is so great that, in the unlikely event I lose the suit, I intend to declare myself an independent country and request foreign aid from the United States.

The article that CSICOP has chosen to honor this year has earned other kudos. Earlier this year, the *Columbia Journalism Review* awarded *JAMA* one of its coveted "Laurels" for having the guts and integrity to publish this exposé in order to correct a previous mistake. This mistake occurred when *JAMA* published a report that promoted Maharishi Ayur-Veda products marketed by the Maharishi Mahesh Yogi and his Transcendental Meditation movement, believing Maharishi, Ayur-Veda to be India's ancient system of healing.

The National Council Against Health Fraud said this article is "a classic in the literature of consumer health education, and is must reading."

The article also was one of the five semifinalists to be judged for this year's National Association of Science Writers' Science in Society Awards.

Last, but not least, the article was rated "gutter journalism" in a press release from the American Association for Ayurvedic Medicine, one of the parties that is suing me and my editor.

Despite such kudos, under the advice of attorneys I am unable to talk about my article or about the lengthy investigation behind it. But I would like to give some credit where a lot of credit is due.

I am indebted to Phil Gunby, director of *JAMA*'s division of medical news and humanities, Richard Glass, deputy editor of *JAMA*, and George Lundberg, editor, for giving me an enormous amount of freedom to conduct this and my other journalistic investigations. Their support never

wavered despite the stream of attacks on my personal and professional character they received.

Marsha Goldsmith, director of *JAMA*'s Medical News and Perspectives department, was the primary editor of the article. I am in her debt for keeping me faithful to the English language and to a dispassionate discourse of the facts.

I also want to acknowledge the enormous help I received from Diane Hendel, Pat Ryan, and others associated with TM-EX, a support group for former members of the TM movement. Ryan and Hendel spent countless hours and dollars on phone calls and faxes that provided me with much of the information and documents upon which my article was based.

I also want to credit CSICOP and the SKEPTICAL INQUIRER, and people like Randi, and Ken Frazier, and Paul Kurtz, and all the others, for providing me with the background information over the past 16 years that enabled me to catch *JAMA*'s mistake.

Perhaps most of all, I am grateful to George Lundberg for having the integrity to expose the journal's own error and the courage to expose the errors of others even when faced with the threat of litigious retaliation.

Lundberg is not the only editor of a prestigious medical journal to be hit recently with a defamation suit—a suit that in my opinion is totally without merit. In August, a month after the suit was filed against us, Arnold Relman, the recently retired editor of the *New England Journal of Medicine,* and three other medical experts were sued for making critical comments about a controversial cancer treatment center. These comments were published in a major city newspaper. Relman was sued for $6 million because he gave a low opinion of the center's advertising, an opinion similar to that held by many other medical authorities. My journalism, law, and society professor, the great Fred Friendly, taught that opinion was protected speech. [On December 16, U.S. District Judge A. Joe Fish dismissed the suit against Relman and two of the three other defendants.]

While opinion and truthful statements are usually protected from *successful* lawsuits in the United States, such speech does not appear to be protected from harassing lawsuits that are brought to punish critics and to intimidate others who would speak out.

More and more now, opinion and truthful speech are being fought with SLAPP suits—SLAPP is an acronym for strategic lawsuits against public participation. These frivolous and harassing suits are being brought by powerful groups with deep pockets. Their intentions are not to recover damages but to stifle, to silence, public criticism.

Those who have followed the trials and tribulations of CSICOP and James Randi don't have to be told how frightfully damaging SLAPP suits can be. SLAPP suits are brought with little expectation of winning. Those who bring SLAPP suits win no matter how the case is decided. Their rewards are virtually guaranteed from the start, for the suit ties up defendants and drains their energies and finances, and punishes them psychologically for having spoken out. At the same time, it warns others of what they could face if they dare to enter the public debate.

The SLAPP suit problem has grown so intolerable that the states of California and New York have passed legislation to provide some relief for victims. The new laws, which

go into effect in 1993, will make it easier for defendants in frivolous defamation suits to collect their legal expenses from plaintiffs.

Similar protection is needed in the 48 other states and in the federal courts. I believe that the SLAPP-suit epidemic will end only after the courts more consistently make plaintiffs pay for abusing the legal process for the purpose of stifling public debate.

Toward that end, I would like to suggest that CSICOP and other groups represented here consider organizing a conference next year to explore remedies for the SLAPP epidemic. I've spoken recently with leaders of the Council for Advancement of Science Writing, the National Association of Science Writers, and the Scientists Institute for Public Information about such a conference, and they expressed an interest in participating. I believe there are other organizations that also would be interested in cosponsoring such a meeting.

In conclusion, I think it is an outrage that in this free land people like Randi and groups like CSICOP have to risk financial ruin in order to speak their minds. I think it is outrageous that many publications in this land of liberty are not willing to publish articles that are critical of SLAPP-happy individuals and groups. And I think it's outrageous that a journalist in the United States is prevented from discussing his work at an awards ceremony for that work.

I think it's time we start SLAPP-ing back.

Thank you all very much. □

OUT THERE Rob Pudim

WHY EVERYONE WAS ALWAYS SOMEBODY IN THEIR PREVIOUS LIFE.

Magic for Skeptics II

Secrets of Psychics, Mediums, and Mentalists

An Institute for Inquiry CSICOP Seminar

Friday, Saturday, and Sunday April 16-18, 1993

Being a skeptic is neither sufficient nor just cause for denying oneself the pleasure derived from pretending to read minds, predict the future, perceive remote scenes, and talk with discarnate spirits. If you would like to master these skills, then you should attend the Magic for Skeptics II workshop.

Concerned specifically with "mental magic," this CSICOP seminar is designed to uncover the secrets of so-called psychics and mediums past and present, as well as those of professional entertainers who imply that they possess paranormal powers. The workshop will also teach attendees (1) how to create their own successful mentalist routines and (2) how to investigate spiritualistic and supernatural pretenders.

Since the focus of this workshop is different from that of the 1992 Magic for Skeptics, there is minimal overlap. Make your reservations now. A magic kit will be provided.

Friday, April 16

1:00 - 2:00 pm: Registration

2:00 - 5:00 pm: How to be a Mentalist I: Credulity Across the Centuries

5:00 - 7:00 pm: Cocktail Party (Cash Bar)

Saturday, April 17

9:00 am - Noon: How to Be a Mentalist II: Psychology of Magic

Noon - 2:00 pm: Lunch Break

2:00 - 5:00 pm: Investigating Psychics

5:00 - 9:00 pm: Banquet and Entertainment

Sunday, April 18

9:00 am - Noon: Question and Answer Session

Seminar Leaders

Joe Nickell teaches at the University of Kentucky and is a member of the CSICOP Executive Council. He has extensive experience in paranormal investigating and has written several books, including *Secrets of the Supernatural* and *Mysterious Realms.*

Robert Baker is professor emeritus of psychology at the University of Kentucky, a CSICOP Fellow, and the author of *They Call It Hypnosis* and *Hidden Memories*

And plan to attend these CSICOP Seminars:

June 9-13, 1993, Buffalo N.Y. (Institute for Inquiry Summer Session): **Investigating UFOs: Facts, Fallacies, and Fraud,** with Robert Baker, Robert Sheaffer, and James McGaha

August 19-23, 1993, Eugene, Ore.: Skeptics Toolbox II, with Ray Hyman, Barry Beyerstein, Loren Pankratz, and Jerry Andrus

To register or for more information, call or write **Barry Karr, CSICOP, Box 703, Buffalo, NY 14226, 716-636-1425.**

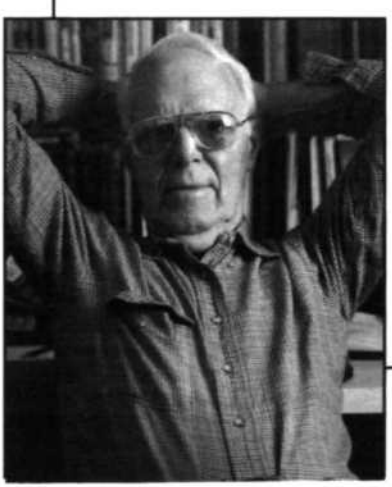
"Crank science books far outsell most books by reputable scientists."

I wrote the words above way back in 1981, in my book *Science: Good, Bad and Bogus*. I think they are still true.

The book is a collection of essays, many of them culled from the pages of the SKEPTICAL INQUIRER. There I dealt with ESP, biorhythms, psychics, and dozens of other fringe-science phenomena.

That was then. This is now. Hardly anyone takes biorhythms, ancient astronauts, or the Bermuda Triangle seriously anymore. I expect that this is at least partly because the SKEPTICAL INQUIRER and its parent, CSICOP, have been doing their work.

Psychics? We have lots more to do there. But we need to work from a position of strength. That's where the Center for Inquiry comes in. The Center, in Amherst, New York (a suburb of Buffalo, 60 miles from Rochester, 80 miles from Toronto, an hour by air from New York



Martin Gardner,
co-chairman of CSICOP's
"Price of Reason" Campaign

City, five hours from California), will be able to dedicate these features to the skeptical movement:

1. **The world's largest skeptics' library**
   (See Paul Kurtz's article, pp. 250-251.)
2. **Our own seminar, meeting, and conference rooms**
3. **Our own video and audio production center**

The new facility will provide 25,000 square feet of space, a tenth of a mile from the Amherst Campus of the State University of New York at Buffalo, the largest campus of the country's largest state university system.

Price: $3.96 million in donated capital. I am proud to be co-chairman of this effort with Steve Allen. We have both given to it. But we can't accomplish our goals without your participation, too.

Please use the postpaid response card in this issue, and let us know how you would like to help out.

Martin Gardner

From the Chairman

The Proposed Center for Inquiry Library

PAUL KURTZ

The founding of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) was a unique event in human history, for it was the first time that skeptics formed an organized movement of considerable importance. CSICOP publishes its journal, the SKEPTICAL INQUIRER, with almost 40,000 subscribers worldwide, and *Skeptical Briefs*, a timely newsletter providing information about the skeptical movement. CSICOP also sponsors numerous conferences, seminars, and workshops in North America and throughout the world. It plays a vital role in the media, providing newspaper, magazine, radio, and television journalists with a constant flow of information and offering scientific evaluations of claims of the paranormal. There are now almost 70 autonomous and independent skeptics' groups worldwide. They share the aims of CSICOP and also publish magazines and newsletters and convene conferences.

The SKEPTICAL INQUIRER is now recognized in the scientific community as the leading source of critiques of paranormal and pseudoscientific claims and as one of the leading proponents of scientific inquiry, critical thinking, and science education. Our long-range and most important goal, of course, is to extend the readership and impact of the SKEPTICAL INQUIRER, the chief voice of CSICOP.

In order to increase the impact of skeptical thinking and to continue to foster public appreciation for the methods of scientific inquiry, CSICOP has embarked upon three new major projects in the past three years: (1) the founding of the Institute for Inquiry, (2) the development of a media center, and (3) the creation of a research library. It is the third of these I wish to focus on here: the establishment of a Center for Inquiry library.

Why is this project so critical? First, because there is a huge number of popular books and articles published each year on a wide range of paranormal and fringe-science topics—from astrology, spiritualism, and UFOlogy, to psychic phenomena, faith healing, and alternative medicine. These publications are widely read by the public, and most people do not know of the existence of critical appraisals of the claims promoted. There is a significant literature of skeptical critiques examining such claims, but these findings are often lost in the flood tide of pro-paranormal and pseudoscientific literature. Although there are many specialized

collections of pro-paranormal writings—held by organizations devoted to psychical research, for example, or to parapsychology or spiritualism—there does not exist, as far as we are aware, a library that provides access to the wide range of skeptical literature.

As you may know, in 1991—in cooperation with the Council for Democratic and Secular Humanism, the publisher of *Free Inquiry* magazine—CSICOP purchased a building on land adjacent to the new campus of the State University of New York at Buffalo. Phase I of our building program, which was completed in 1991, was to refurbish and add on to the existing building, a former residence, to temporarily house our executive offices and some of our operations. This building, the present Center for Inquiry, is much too small. There is a critical need to build a larger edifice. Indeed, the Center for Inquiry Capital Fund Drive is now under way to enable us to construct a new building on our present property—Phase II. This proposed building will provide space for a library as well as for additional offices and rooms for meetings and seminars.

Our present plans are to create a 3,000-square-foot library to house an estimated 25,000 books, and there will be space to expand the collection to 50,000 volumes. Our periodical collection will contain the leading science journals and magazines, the 40 or more skeptics' magazines and newsletters published worldwide, and the leading journals in the paranormal field, from the *Journal of Parapsychology* and the *Journal of the Society for Psychical Research* to the *Mutual UFO Network Journal* and *Fate*. We now receive some 70 journals, but hope to increase this number to 140.

A significant function of the library will be to file and index clippings of newspaper, magazine, and journal articles using the latest computer technology. We have amassed tens of thousands of these items. We also intend to develop up-to-date bibliographies on many scientific, educational, paranormal, and pseudoscientific topics. CODESH will maintain a cognate library of freethought literature.

The Center for Inquiry library will be an invaluable source of information for SKEPTICAL INQUIRER subscribers as well as for research scholars, scientists, students, the media, and the general public.

Many hundreds of the books and journals in our collection have been donated by individuals or estates. We are earnestly seeking to expand this collection and are also willing to act as the repository for papers of skeptical investigators.

The total capital needs are (1) $500,000 to build and equip the library and to acquire books, journals, and reference works, and (2) an endowment fund of $800,000 to provide an annual income of $60,000 for acquisitions, staff, and maintenance of the library, for a total capital fund of $1,300,000. CSICOP's share would be one half of this—$250,000 for the library and $400,000 for an endowment—a total of $650,000. This is an important part of our $3,960,000 Price of Reason Campaign.

We urge all readers to realize that the library will do more than be a repository for knowledge. It will enrich and stimulate research. Interested readers are invited to send in the reply card inserted between the preceding two pages, as soon as possible. □

News and Comment

It's "All Electromagnetic" for British Esoterics

What could be more tempting for a vacationing skeptic than the ad for an "Esoteric Fair" in the middle of London, England? So I happily paid my £2.50 entrance fee for the opportunity on September 6, 1992, to meet "the other side" firsthand in, as it turned out, only one of an endless string of similar events all over Great Britain.

The fair included some sales stands, a vast array of desks with graphologists and palm-readers waiting for customers (at £8 per reading) and free lectures. Naturally I attended the lectures first and promptly got an impression of what the esoteric universe seems to be for the British of 1992: a natural science like any other! Just take the astrologer who presented the real links between solar activity and radio interference as well as the alleged planetary influences on people as the same phenomena (which also includes a causality between Uranus and "all volcanic eruptions between 1900 and 1950"). He spent much of his talk discussing why the earth's atmosphere, magnetosphere, and Van Allen belts (graphs of which decorated the walls) do not shield us from the planets' forces. And he had the answer: Because man is "a tuning fork." Obviously to him the supposed planetary forces actually act by a physical radiation! But this was only the first revelation of this kind.

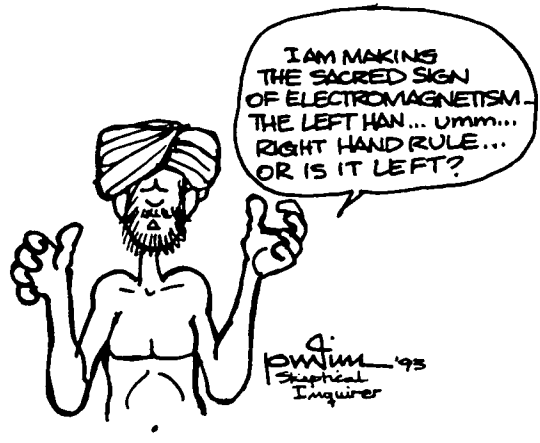
For example, guess what the lady with the Tarot cards answered when I asked her why the sequence into which a customer shuffles the deck should be able to forecast the future? "It works by electromagnetic fields" came her reply without hesitation. Another representative of the "School of Tarot Art and Research" (*sic!*), which had organized the fair, was not so sure about the mechanism: No, there wasn't a scientific explanation of the Tarot effect yet, but it could be forthcoming. Just as in the case of the human aura, she elaborated, the esoterically minded had the notion first, but now it's an established science. How is that? Just look at your Kirlian photograph.

The aura and the importance of its "cleansing" seems to have taken center stage among the British esoteric community anyway, obeying the Maxwellian equations, of course. So we now have to "cleanse our fine electrical systems and balance our energies" (as the Emin Network tells in a leaflet that also complains: "No one ever told us of this electrical part of ourselves, let alone how to care for it.") "There is within each of us a vast collection of finely tuned electromagnetic systems," the School of Electrobix and Related Arts agrees—and offers a six-week course to "rebalance and revitalize the body's energy systems" by a specific series of movements: "Electrobix has arisen through a thorough understanding of the human aura and the electromagnetic systems." From the stage-demonstration of these electro-aerobic exercises it seemed to

me that the human body—in particular, the hands—are regarded as a big capacitor. Sometimes the energy even spills from the stage into the audience, someone warned me, and offered more insight: "They're balancing the electro and the magnetic."

But this is only one step in becoming one again with Nature, the School of Meditation Sciences and Arts tells us: "The planet, which is our home, has a blue radiation, and the lives upon her become open to planetary wisdom when they are on the same wavelength. Alignment to this radiation is a necessary step for us to proceed . . . to the fullness of ourselves." Even meditation isn't possible without physics these day, it seems.

Few spots can be as entertaining in London as these Esoteric Fairs, and they're unlikely to be gone soon: For the past two years their organizers have noted a big growth in attendance, due to a "general turmoil" in society.



And guess what caused it, the recession perhaps? No way. It was the dawning of the Age of Aquarius.

—*Daniel Fischer*

Daniel Fischer writes from Königswinter, Germany. While in London, he barely escaped the temptation to also call the "Live Destiny Line," which offers "Live 24 hours of Clairvoyance, Tarot, Runes, Astrology and much more!" for just 36 pence a minute.

J. Z. Knight Divorce Trial Reveals Workings of Channeling Business

A Tacoma, Washington, judge has ruled against J. Z. Knight, the well-known channeler, in a divorce suit. The channeler's former husband, Jeffrey Knight, had asked the court to overturn a 1989 settlement that gave him $120,000. The judge sided with the ex-husband and, according to the December 5, 1992, *Seattle Times*, awarded him an additional $792,000. The real story of the suit, however, was not in the outcome, but in the revelations from the witness stand about the inner workings of the channeling business.

J. Z. Knight claims she "channels" a 35,000-year-old warrior from Atlantis named "Ramtha." Ramtha and Knight rose to fame when movie star Shirley MacLaine plugged them in her book *Dancing in the Light*. Further favorable publicity followed when TV's "Dynasty" star Linda Evans acknowledged a close relationship to both J.Z. and Ramtha. Subsequent stories in *Newsweek*, *People*, and *Time* put Knight in the forefront of this

revitalized form of spiritualism.

Supporters of J. Z. Knight stress the positive aspects of her counsel. In a May 1988 *Redbook* article, Linda Evans said that Ramtha "holds a truth or emotion until you can totally feel and know it. He puts the information in front of you to see. People then have the option of either changing or keeping their behavioral patterns." In the same piece, Evans credited Ramtha with enabling her to face the facts of her divorce from director John Derek. "I had to take responsibility for my part," she said. Ramtha emerged in the articles as a sage voice amid the frenzy of modern life.

Not all the publicity about the ancient warrior has been favorable. A December 15, 1986, *Newsweek* story quoted a former follower who broke away from Ramtha when the spirit said that "Mother Nature" wanted to "get rid of homosexuals." Other disillusioned followers have spoken out against Knight, and one alleged that she herself could impersonate Ramtha without going into a trance. But not until this case has Knight's judgment come under scrutiny.

According to a September 10, 1992, article by John Gillie, who covered the trial for the Tacoma, Washington, *Morning News Tribune*, Jeffrey Knight told the court he questioned J.Z. about the high prices they charged for their racehorses and the promises of high earnings that Ramtha had made to investors. J.Z. assured him that "Ramtha could foresee and guarantee a horse's future." How accurate the predictions for equine performance turned out to be was not established. But, according to an article by Gillie in the same paper the following day, Ramtha clearly did not foresee one serious problem in the couple's future. In 1985, Jeffrey Knight was diagnosed as HIV-positive. He testified in court that, on the advice of Ramtha, he shunned medical treatment for his condition until 1991, when he "finally became convinced Ramtha was a fraud." He went on to claim that Ramtha "seemed to condone tax evasion" and taught about bizarre aliens who lived deep underground and occasionally kidnapped humans "for sustenance."

When J. Z. Knight took the stand, her testimony hardly squelched the hubbub caused by her ex-husband. She denied many of Jeffrey's allegations, particularly those concerning unreported income (*Morning News Tribune*, September 29). She told the court she had once channeled Jesus. She also admitted that her lawyers had written letters to other channelers of Ramtha threatening suit if they continued to use the ancient warrior's name. She explained that Ramtha has the "power to teach people to heal themselves and the power to heal them himself" (*Morning News Tribune*, September 24).

Her testimony faltered at times. John Gillie wrote that Knight often used the words "I don't remember" and "repeated the phrase dozens of times in a two-hour session on the witness stand. She claimed she didn't remember where she went to business college, when she divorced her fourth husband, and whether she signed a dozen or more letters and legal documents" (*Morning News Tribune*, September 24).

Mostly the suit concerned money. At issue was the couple's $3-million estate, complete with a horse barn lit by chandeliers and decorated with wallpaper. According to Jeffrey Knight's attorney, J.Z. spent $60,000 in a little more than two months on gold. The money comes from thousands of Ramtha adherents who pay up to $400 apiece to hear the ancient warrior in person. There are books and video cassettes for those who can't

attend the mass gatherings. According to documents presented in court, the Ramtha organization made millions, an average of $600,000 a month, while the couple was married.

In tears at one point on the witness stand, J.Z. said her former husband had "called her a fraud" and later "a greedy bitch," Gillie reported in a September 30 article. Talking with reporters after J.Z.'s emotional session on the stand, Jeffrey Knight said, "My ex-wife was always a good actor."

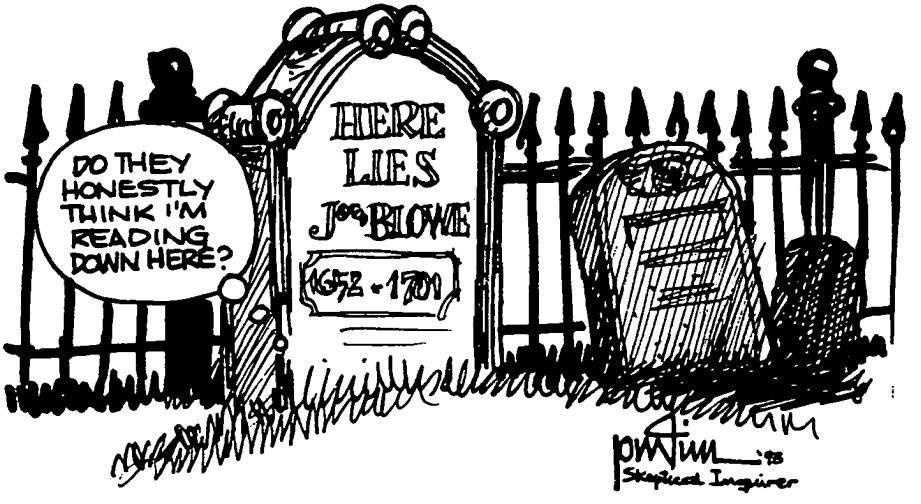
—*Michael R. Dennett*

Michael R. Dennett writes from Federal Way, Washington.

Follow-Up on the Bruton Parish Church's Vault Excavation

As noted in the SKEPTICAL INQUIRER (Psychic Vibrations, Fall 1992), New Age Christian mystics claimed the Bruton Parish Church graveyard in Williamsburg, Virginia, to be the location of a burial vault that is supposed to house writings and documents of Francis Bacon. These documents are supposed to include, among other things, writings "essential to world peace." After the unauthorized digs by Marsha Middleton and her supporters in 1991, the Bruton Parish Church vestry authorized a dig in an attempt to end the controversy.

The authorized excavation was begun August 18, 1992, by workers of the Colonial Williamsburg Foundation. The dig proceeded in an orderly fashion, but it was slowed by ground water and the discovery of several coffins. The dig was stopped when soil that had clearly remained undisturbed in historic times was encountered. The Colonial Williamsburg Foundation archaeologist, Marley Brown III, granted that, although of minuscule probability, a tunnel could have been dug and the alleged vault built below



the level of the current excavation. G. H. Johnson, a geology professor at the College of William and Mary, began work to bore 20 holes to a depth of 20 feet below the current excavation depth (approximately 9 feet). All that was found was clay, ancient sea shells, and ground water. At that point the dig was concluded and the excavation filled. To summarize, a nine-person archaeological team excavated a 20-foot-by-22-foot hole to a depth of 9 feet and removed all the soil that had ever been disturbed by man. Twenty 20-foot-deep holes were also spaced throughout the excavation site. No evidence of a burial vault was found.

Through the course of the dig the New Age mystics, Marsha Middleton and Frank Flint, both of Santa Fe, New Mexico, and other Baconites, commented that the dig was a sham, that it wasn't in the right place, and that they would press the church to allow a probe of the remainder of the churchyard with sophisticated radar gear that can detect objects below the surface. They had scheduled several news conferences but failed to show up, possibly because warrants were issued in 1991 charging each of them with two counts of trespassing and two of destruction of property for their unauthorized excavations. As reported in the *Richmond Times-Dispatch* of September 25, 1992, Middleton and Flint plea-bargained and each received a suspended 12-month jail term and paid a fine of $100 each.

The Reverend Richard May, Bruton's rector, allowed that he didn't think the dig would change the minds of hard-core believers, but he hoped it would satisfy "rational skeptics." The church would rigorously prosecute anyone for digging in the churchyard without permission, he said.

—*Frederick J. Kozub*

Frederick Kozub is in the Department of Psychology, University of Richmond, Virginia.

1992 Was Another Year of Fizzled Predictions for Psychics

President Bush was not re-elected, Madonna did not become a gospel singer, and a UFO base was not found in the Mexican desert. These were just a few of the many predictions that had been made for 1992 by famous "psychics," but were dead wrong, as chronicled by the Bay Area Skeptics.

At the end of each year, many well-known psychics issue predictions for the year to come. Twelve months later, they issue another set of predictions, conveniently forgetting those made the year before, which are always nearly 100-percent wrong. Each year, however, the Bay Area Skeptics dig up the predictions made the year before, to the embarrassment of those who made them.

Many of the predictions made are so vague that it is impossible to say if they came true or not. Some predictions did of course come true, some of those that were unspecific or not at all difficult to guess: Several psychics correctly predicted that a hurricane would cause major destruction in Florida or Cuba, but not one was specific as to the date or principal location of the damage. Hurricanes occur, of course, every season in the Caribbean. Significantly, not one prediction that was both specific and

surprising came true.

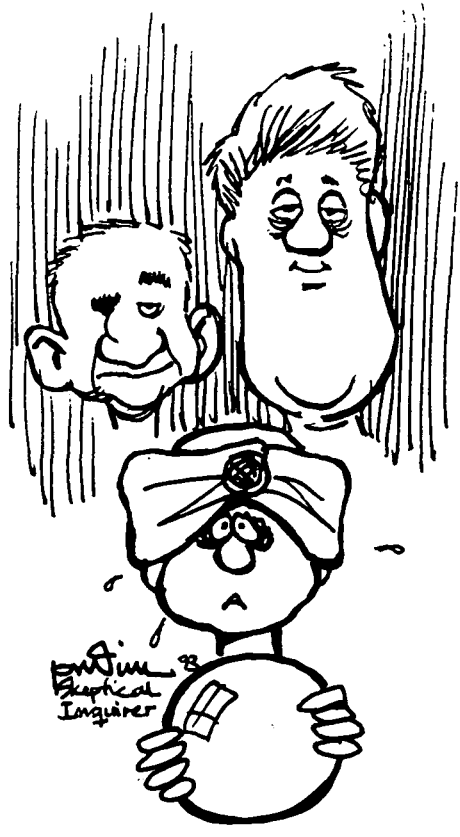
New York psychic Lou Wright predicted that three men would unsuccessfully attempt to kidnap Candice Bergen in Paris, and Marlon Brando would be arrested for trying to help his son break out of jail (*National Enquirer*, January 2, 1992).

Los Angeles psychic Maria Graciette predicted that a secret UFO base, thousands of years old, would be found deep in the Mexican desert and that Vice President Quayle, attending a World Series game, would impulsively interfere with a play (*National Enquirer*, June 9, 1992).

Another New York psychic, John Monti, predicted that "a massive hurricane will devastate Cuba and topple Castro's regime," that a huge AIDS epidemic would "threaten to end professional sports" (*National Enquirer*, January 2, 1992), and that a scientific advance would allow women to delay menopause, making it possible for them to have children into their 60s (*National Enquirer*, June 9, 1992).

The famous Washington, D.C., psychic Jeane Dixon, who supposedly has a "gift of prophecy," saw that Fidel Castro would be overthrown, possibly resulting in Cuba's becoming part of the United States, and that Virginia governor Douglas Wilder would gain enough support for a "vice-presidential invitation." President-elect Bill Clinton, however, she described as "the Democratic shooting star," and said that "an organization of women will try to block his path" (*The Star*, January 21, 1992). President Bush's ratings would climb, resulting in his reelection (*The Star*, July 7, 1992). She also predicted "a promising economic upturn in the spring," and that "broccoli will become the miracle vegetable of the nineties" (*The Star*, January 21, 1992).

Chicago psychic Irene Hughes



predicted that Vanna White and her husband would purchase a "haunted" mansion in Beverly Hills, from which they would flee in terror a week later. Madonna's career would be interrupted by a "mystery illness," but she would recover after having a religious vision and become a gospel singer (*National Enquirer*, June 9, 1992).

Joan Quigley of San Francisco, White House astrologer to the Reagans, predicted that Bill Clinton would run out of money toward the campaign's end and that the total eclipse of the sun on June 30 would cause earthshaking events in China (*Washington Post*, April 18, 1992).

In Northern California, the date of that devastating California earthquake everybody keeps predicting was pegged for October 17, the third anniversary of the Loma Prieta quake, by psychic Ernesto A. Moshe Montgomery, who claims an accuracy of 99½ percent (*San Jose Metro*, February 27, 1992).

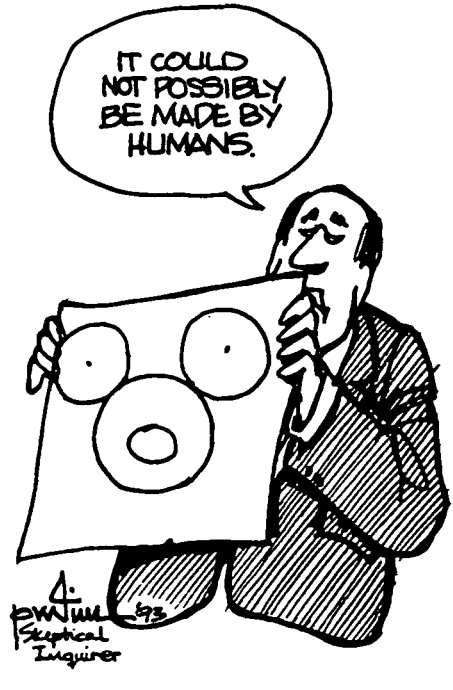
Based on the continuing failure of the "psychics" to make accurate predictions over the years, the Bay Area Skeptics urges everyone—especially the media—to exercise some healthy skepticism when psychics and other purveyors of the paranormal make extraordinary claims or predictions. Anyone who accepts the psychics claims year after year without checking the record is setting a bad example for students and the public.

It is important to note that no psychic succeeded in predicting the genuinely surprising news stories of 1992: the destructive fire in Windsor Castle; the feud between Vice President Quayle and Murphy Brown; the surprising presidential campaign of Ross Perot. These major news stories were so totally unexpected that someone would have had to be genuinely psychic to have predicted them 12 months earlier! Given the sheer number of self-styled psychics out there, one would expect that if even one of them were genuine, these things would have been correctly predicted.

—*Bay Area Skeptics*

Crop-Circle Makers Get Ig Noble Prize

For the second year in a row, at the same time as the Noble Prize awards, the MIT Museum and the *Journal of Irreproducible Results* have awarded their Ig Noble prizes, honoring "men and women whose achievements cannot and should not be reproduced." Among this fall's winners were, in Physics, David Chorley and Doug Bower, the two elderly landscape painters in England who showed the world how they made many of those mysterious crop circles. (Even so, the debate continues; dedicated circle-ologists still contend that not all the crop-circle patterns could have been made by humans.) Chorley and Bower were honored for "their circular contributions to field theory based on the geometric destruction of English crops."



Sloppy Words and Physics Dilemmas

The answer to lots of "intractable" questions often comes down to what we mean by the words we use. Two men, for separate and unrelated reasons, decide to go to the market at the same time. They meet in the market. Is their meeting determined or indeterminate? I have not made up this conundrum; Aristotle did in his *Physics*, Book II, Chapter 5. The answer is, of course, what do you mean by those words? Depending on what we mean by them, we can then easily go on to decide whether their unplanned meeting is "determined" or not. A lot of quantum theorists would make things a lot clearer to themselves and the rest of us poor souls if they took the trouble to define what they mean by "determined" and "indeterminate," by "cause" and "effect." The two men's meeting in the market seems to be the effect of a cause, or a number of causes. But has the meeting been determined, is it the effect of cause(s), or are there no causes that brought about this effect and is the meeting indeterminate? It's all a terrible dilemma—until we say how we are using the words, then the dilemma disappears.

Other words like "chance" and "random" need defining too. This may take time but in the long run it will save us a good deal of unnecessary confusion. Radioactive atoms decay in "random" order that is unpredictable. Does this mean that decay is "uncaused"? Light exhibits either particle- or wave-like characteristics, depending on the instrument we use to observe it. Does this mean that light is both a particle and wave alternately? I bounce a tennis ball on a firm, hard surface. The ball reacts a certain way. I bounce the same ball on a sticky, soft surface. The ball reacts differently. I drop it down a 40-foot well. It doesn't seem to react at all. The ball possesses a "complementarity of bounceabilities"? Well, that's one way of putting it. But is it the explanation that accounts for the most facts most simply? I suspect it isn't. I suspect our problem with the "dual" nature of light (and particles) is a problem we have constructed by asking the wrong questions, using the wrong words, or rather, not really defining how we are using the words.

I suspect that, at the nitty-gritty level, many of our "insoluble" dilemmas in physics and elsewhere are the result of sloppy words. Physicists are rarely much good with words, so they prefer talking in mathematics, forgetting that math is just another, more concentrated form of language and no better, no more accurate and precise, than our definitions of the forms and principles involved. Things may happen in such-and-such a way in mathematical models, but that does not necessarily mean it happens that way in the real world of time and space, the one "out there."

—Ralph Estling, "What Do You Mean by That?" *New Scientist*, August 15, 1992. Reprinted by permission.

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Notes of a Fringe-Watcher

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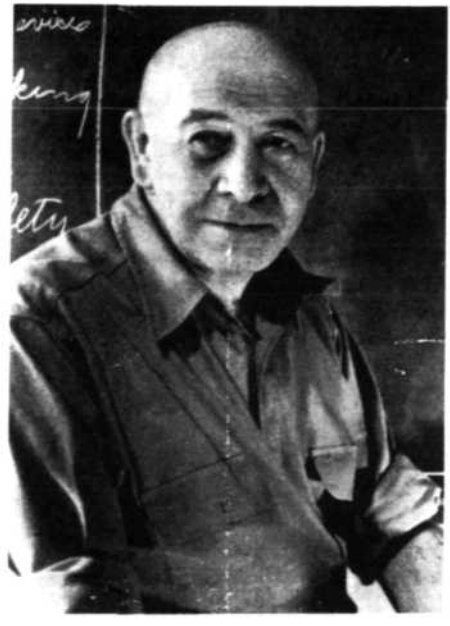
From time to time, individuals become smitten with a strong urge to reform the English language. Improving spelling has been the most popular impulse. George Bernard Shaw was a prominent champion of such a cause. The philosopher-critic I. A. Richards developed Basic English, a simplified subset of English that he hoped would become a unifying world language. Today's writers and editors seek to replace masculine-loaded words like *mankind* and *chairman* with gender-neutral words like *humanity* and *chairperson*. The philosopher John Dewey wanted to drop the word *truth* from philosophical discourse, substituting for it "warranted assertability."

In recent years, the most curious proposal for a subset of English has come from the ranks of General Semantics, a movement started in the United States some 60 years ago by the Polish-born Count Alfred Habdank Skarbek Korzybski. The new language is called "E-Prime." Few outside the movement were aware of it until Cullen Murphy wrote about it in " 'To Be' in Their Bonnets: A Matter of Semantics," in the February 1992 issue of the *Atlantic Monthly*. The article aroused a great surge of interest among the magazine's readers.



DAVID B. EISENDRATH, JR.

Alfred Korzybski, founder of the General Semantics movement in the United States.

Count Korzybski was far from the first to be concerned with semantics, the study of how signs, especially words, relate to things. An enormous literature on the topic existed long before the Count even heard of the term. Philosophers going back to Plato and Aristotle had, of course, been much concerned with analyzing the meanings of words. The American

philosopher Charles Peirce pioneered the modern study of signs, and more recent philosophers, such as Charles Morris, Alfred Tarski, Rudolf Carnap, and W. V. Quine, wrote extensively about semantics. (See the long article, "Semantics, History of," in *The Encyclopedia of Philosophy.*)

However, it was Korzybski's massive work *Science and Sanity,* and popularly written books by Stuart Chase and other enthusiasts, that brought the word *semantics* into public use. Let me expose my bias at once by quoting what I said about *Science and Sanity* in my 1952 book *Fads and Fallacies in the Name of Science:*

> It is a poorly organized, verbose, philosophically naive, repetitious mish-mash of sound ideas borrowed from abler scientists and philosophers, mixed with neologisms, confused ideas, unconscious metaphysics, and highly dubious speculations about neurology and psychiatric therapy.

It was not that Korzybski said anything wrong about semantics but that what he said was trivial. Everybody knows, to use one of Korzybski's best-known slogans, that "the map is not the territory." Everybody knows, to quote another slogan, that "the word is not the thing."

Except in formal logic and mathematics, all words have fuzzy definitions. Fuzzy logic, a flourishing new approach to formal logic, has been designed to handle fuzzy sets. Chairs fade off in many directions, along continua, into things no one calls a chair. No sharp lines divide day from night, tall from short, beautiful from ugly, or the front of your head from the back of it. (Are your ears in front or in back?) Moreover, everything changes in time. You are not the person you were many years ago. The universe was once the size of a pinpoint.

Korzybski was down on Aristotelian logic for its emphasis on identity in such syllogistic statements as "All men are mortal." ("Men" obviously includes women, but does it include our apelike ancestors?) To emphasize nonidentity the Count distinguished between chair 1, chair 2, chair 3, et cetera. This is called indexing. Changes in time are indicated by dating: chair 1920, chair 1992, et cetera. "Et cetera" symbolizes the many, sometimes infinite, referents a noun can have. *ETC.* is the title of the general semantics movement's leading journal, a quarterly founded by the late (he died in 1992) Samuel Ichiye Hayakawa. He edited *ETC.* for 26 years, before becoming a controversial Republican senator from California. Many introductions to General Semantics have been written, but Hayakawa's *Language in Action* (1941) has been by far the most popular.

Science and Sanity, the 800-page bible of General Semantics, was published in 1933 by the Count himself. When I was a philosophy student at the University of Chicago, I used to attend lectures at his Institute of General Semantics. It was said that he chose the building for the Institute, 1234 East Fifty-Sixth Street, because its address had the first six digits in numerical order. The Count was a stocky man who shaved his head and liked to wear army-type clothing. He frequently interrupted his talks by shouting, "Bah! I speak baby stuff." A man of enormous ego, he fancied himself one of the world's greatest philosophers. When the university's philosophy department sponsored a symposium on semantics, Korzybski was invited to speak. He refused because he was not allowed to deliver the main address.

As the word *general* implies, Korzybski broadened the meaning of

semantics to include all the ways that living things interact with the outside world. The turning of a sunflower toward the sun is a "semantic reaction." A baby vomiting to get a second nursing, the Count wrote, is her "semantic way of controlling 'reality.' " The most debatable aspect of *Science and Sanity* is its great emphasis on how learning to evaluate words properly can raise one's intelligence, increase one's health and happiness, and cure all sorts of neuroses, psychoses, and psychosomatic ills. Korzybski coined the word *unsane* for people who are not far enough gone to be in mental institutions, but whose neurotic behavior springs from an inability to distinguish their mental maps from the outside territory.

The Count strongly disliked the overuse of "is" and all other forms of "to be." Such words, he argued, are a primary source of semantic mischief. We naively assume that all apples are red, forgetting that some are green and some are yellow. Race prejudice arises from such notions as "all blacks are mentally inferior." "Isness," the Count declared, "is insanity." Incidentally, a vast philosophical literature preceding General Semantics deals with identity. A famous paper by George Santayana, first published in 1915, is titled "Some Meanings of the Word Is."

Almost all philosophers consider *Science and Sanity* a crankish work. "It is my considered opinion that *Science and Sanity* has no merit whatever," wrote the distinguished philosopher of science Ernest Nagel in a letter to the *New Republic* (December 26, 1934), replying to readers who objected to his earlier (October 24) hatchet review of the book.

Bertrand Russell was the modern philosopher Korzybski most admired. The feeling was not mutual. In a letter to be found in *Dear Bertrand Russell* (1969, p. 103), a collection of Russell's correspondence, he wrote: "I have never admired the work of Korzybski and I do not, in any degree, endorse the supposed connection of Aristotelian logic with mental illness."

For the American philosopher W. V. Quine's low opinion of the

Cover of the Summer 1992 *ETC.*, showing forms of "to be" slashed out of English. Note the symbolic bee at upper right.

Count, see his autobiography, *The Time of My Life* (1985, p. 140), where he calls him "Wayward Waywode" (*waywode* is a Polish term for an Army general). In *Quiddities* (1989, p. 232), Quine chastises Korzybski for going to such absurd extremes in his attacks on identity—the Count wrote in *Science and Sanity* (p. 194) that "1 = 1" is false because one 1 is on the left, the other on the right. As Quine puts it, "He confused the ink spots with the number, abstract and invisible."

Alfred Tarski, the great Polish mathematician and logician, had this

to say about Korzybski in his classic paper "The Semantic Conception of Truth" (1944):

> It is perhaps worth while saying that semantics as it is conceived in this paper (and in former papers of the author) is a sober and modest discipline which has no pretentions of being a universal patent-medicine for all the ills and diseases of mankind, whether imaginary or real. You will not find in semantics any remedy for decayed teeth or illusions of grandeur or class conflicts. Nor is semantics a device for establishing that everyone except the speaker and his friends is speaking nonsense.

Note that when the Count said "Isness is insanity," he used the word "is." Was this really necessary? He could have said, "Constant use of 'is' tends to damage one's perception of reality." Would it not be helpful, therefore, to develop a subset of English in which all forms of "to be"—*is, are, am, was, were, been,* et cetera—are verboten?

In the late 1940s, this thought occurred to General Semanticist D. David Bourland, Jr. He called such a purified language "E-Prime." The term comes from the formula E' = E – e, where E is ordinary English from which e (all forms of "to be") is subtracted. He first explained his proposal in "Introduction to a Structural Calculus: A Postulational Statement of Alfred Korzybski's Non-Aristotelian Linguistic System" (*General Semantics Bulletin,* nos. 8 and 9, 1952). In the same journal (nos. 32 and 33, 1965/66), he followed with "A Linguistic Note: Writing in E-Prime."

The idea of writing and speaking E-Prime caught on quickly among a small group of dedicated Korzybskians. Papers written entirely in E-Prime began to appear. E. W. Kellogg III, after many years of arduous training, actually mastered the ability to talk fluently, without hesitations, in E-Prime! He is on record as saying he even dreams in E-Prime, and that learning to speak it greatly improved his mental and physical health. Writing E-Prime is less difficult, though still not easy. Cullen Murphy struggled so hard to put his *Atlantic Monthly* article into E-Prime that he said it gave him a headache that lasted a week.

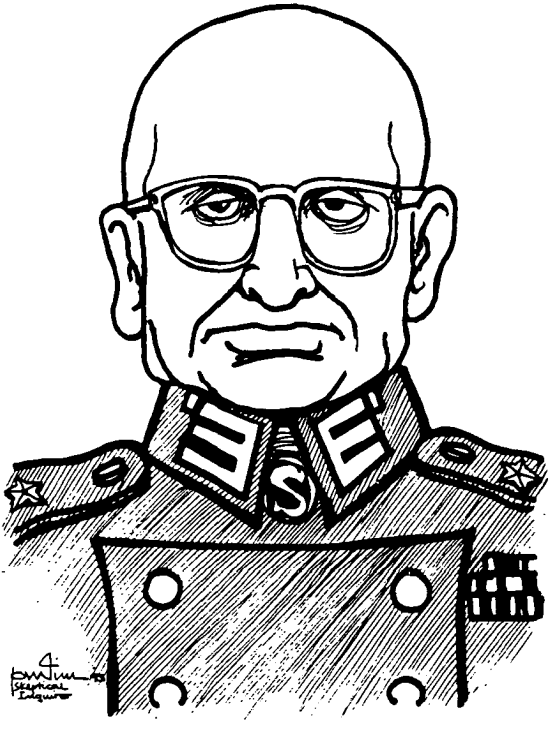
Korzybskians are now divided over E-Prime into three factions. Purists insist that the language is of little value unless all forms of "to be" are excised. Moderate E-Primers object to total exclusion. They prefer a language called E-Choice (after a grade of meat), in which "to be" forms are used sparingly. Anti-E-Primers grant that learning to write or speak E-Prime may be a useful teaching device to impress on students the need for careful thinking about words, but should not be used otherwise.

Literature arguing the merits and demerits of E-Prime is growing in the books and journals of General Semantics. An anthology defending E-Prime, *To Be or Not,* was published by the International Society for General Semantics in 1991. The book's back cover crisply summarizes the volume's content:

> Some of the benefits: lively, concise writing and speaking; clearer, more critical thinking; better communication, evaluation, and decision making. In E-Prime, you can't say *"I am,"* and this results in a different and healthier way of evaluating yourself and others. The use of E-Prime can transform how you relate to the world and to yourself—for the better! Try it.

The entire Summer 1992 issue of *ETC.* was devoted to the E-Prime

controversy, with 21 papers for or against the language. It is filled with examples of how to translate common speech into E-Prime. If a stranger asks, "What's your name?" you can't answer, "My name is John Smith." You must say something like "People call me John Smith." If a child points to something red and asks, "What color is this?" you should reply, "I call it red," or "Everyone calls it red." You must not tell a child, "That animal you see over there is an elephant." In E-Prime you say, "People call that animal an elephant." To be more precise you should say, "People who speak English call that animal you see an elephant." Note that even this sentence implies that the object seen is an animal, but getting rid of all implied forms of "to be" is impossible.



Count Korzybski as "General Semantics"

Was Keats a greater poet than Eddie Guest? You can't say "he was" in E-Prime. The correct statement is: "I consider Keats a greater poet than Eddie Guest." This implies that Keats and Guest *were* poets, but we let that pass. Is it raining? Your correct reply is: "I see rain falling." Is Bill Clinton president of the United States? Your E-Prime answer: "American voters have elected him president." You can't just say "Yes," because that endorses the identity in the question. Even Korzybski's famous statement that the map is not the territory violates E-Prime. Correctly rephrased it says, "The map and the territory do not share identical properties."

Although it is possible to eliminate from English all explicit forms of "to be," is it worth all the trouble? Critics of E-Prime, many within the ranks of General Semantics, point out that it takes months, sometimes years, to master the art of writing and speaking E-Prime. It is quixotic to expect anyone outside the ranks to go to all this trouble. If we did not constantly use fuzzy words we couldn't talk at all. The fact that no two cows are alike doesn't make the word *cow* useless in such sentences as "All cows have udders." If you want to tell a neighbor his house is on fire, you don't stop to think that *your, house, fire, on,* and *is* lack precise definitions. Even if you warned him in E-Prime by saying, "I see flames on your roof," you are using fuzzy words.

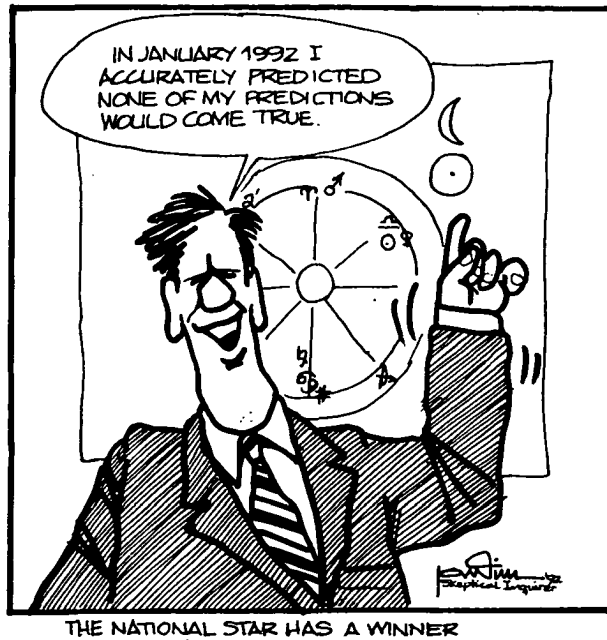
Critics also remind enthusiastic E-Primers that there is no empirical evidence that persons who speak the language have become healthier or happier or learned to think more clearly. As one contributor to the E-Prime issue of *ETC.* said, the language

seems so preposterous to outsiders that stressing it may be bad public relations. It suggests to outsiders that General Semantics is an eccentric cult.

Translating ordinary language into E-Prime may well be good training for someone just learning the kindergarten levels of semantics, but it strikes me as almost as useless an exercise as translating English into words that avoid the letter E. Because E is the alphabet's most common letter, it is not easy to write good English without using it. Nevertheless, entire novels without the letter E have been published. The best specimen in English is *Gadsby*, by Ernest Vincent Wright, printed by the author in Los Angeles in 1939. Wright said he had to tie down his typewriter's E-bar to keep him from typing an E. In 1969 the famous French novelist Georges Perec published *La Disparition* (The Disappearance), a novel in which E had totally disappeared. It is said that some French critics praised the novel without realizing a letter was missing. Here we have a different kind of E-Prime, E (English) from which e is subtracted. The language might even have some slight value in impressing on students of cryptography how much E is overused in English and French spelling.

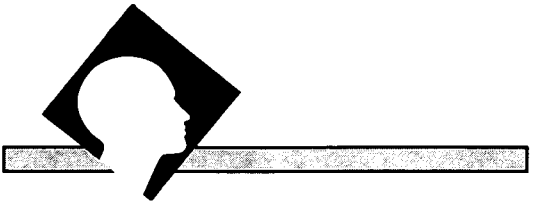
Korzybskians have written poetry in E-Prime. If their enthusiasm for it continues, I wouldn't be surprised if someone wrote a novel in E-Prime. In 1993 E. W. Kellogg hopes to publish a workbook for high school English classes that will be written in E-Prime. I considered composing this column in E-Prime, but when a headache developed after the first few paragraphs, I gave it up and went back to common English. □

OUT THERE Rob Pudim



THE NATIONAL STAR HAS A WINNER AT LAST.

Psychic Vibrations



Levitated Linda, Ear Coning, and Arkeology

ROBERT SHEAFFER

"The Abduction Case of the Century" is what the *MUFON UFO Journal* called it. Linda, a New York City woman who uses the pseudonym "Cortile," claims that in the wee hours of November 30, 1989, she was levitated from her bed and floated out of her twelfth-floor apartment in lower Manhattan. From there, she was floated up on a "blue beam" into a flying saucer, accompanied by three extraterrestrials. What makes her story unique among abduction accounts is not the strangeness of her claim, for accounts of people being floated up out of their beds by "little gray men" are now commonplace. It is not even that her young son claimed an alien abduction of his own, for children's imaginations are seldom more constrained than their parents'. What is unique about the supposed abduction of Linda Cortile is the claim that it was independently witnessed by at least four other persons, including two detectives watching from the ground below. Supposedly they gazed in astonishment as the UFO, with Linda now on board, soar up above the rooftops of Manhattan, then plunged into the East River near the Brooklyn Bridge, on which it allegedly caused several automobiles to stall.

Budd Hopkins, the recognized leader of UFO abductionists, regaled the 1992 MUFON Conference in Albuquerque with the supposed corroboration in a letter from the two anonymous men—supposedly New York City policemen working "under cover"—whom he admits he has never met. When the story the two men gave about their supposed police assignment failed to check out, they sent a second letter, changing their story to claim that they were actually "security agents" guarding a high-ranking diplomat. Cortile claims that these two "agents" first visited her in her apartment, then later kidnapped her twice in broad daylight as she walked in the neighborhood. They allegedly drove her out to a supposed CIA safe house on a beach in Long Island. There one of the "agents" supposedly dropped to his knees to worship her with religious fervor, but later attempted to kill her by holding her head underwater at the beach. Fortunately, she was rescued in the nick of time by the other "agent."

With the situation getting more bizarre each day, a private conclave of prominent UFOlogists was called in October to discuss the case. UFOlogist George Hansen wanted to request a formal federal investigation of the incidents in which Cortile was allegedly kidnapped, assaulted, bat-

tered, harassed, and nearly drowned by the two supposed agents of the U.S. government. He charges that Budd Hopkins, along with Walt Andrus of MUFON and Jerome Clark of CUFOS, strongly objected to any investigation, on the grounds that it could be "politically damaging" to UFO research. (Actually, the only "politically damaging" outcome from such an investigation would be if the claimed abuses turned out never to have occurred.)

Jerome Clark issued a statement claiming that Hansen had "deliberately misrepresented" his remarks. While denying any attempt to suppress further research, Clark admits that he "urged critics to refrain, over the next six months, from pursuing the [federal] investigation," on the grounds that Cortile's story, if true, represented a "politically sensitive" event. Hence any attempt to ferret out the identities of the two mysterious agents would simply alarm the agency responsible, making it even more difficult to track down the supposed agents. Having been burned several times in the past by accepting extraordinary claims that later turned out to be bogus, Clark positioned himself squarely on the fence with regard to this sensational case, proclaiming it is "staggeringly complex, and the available evidence can be read in several ways."

* * *

Some items recently arriving at this skeptic's news desk:

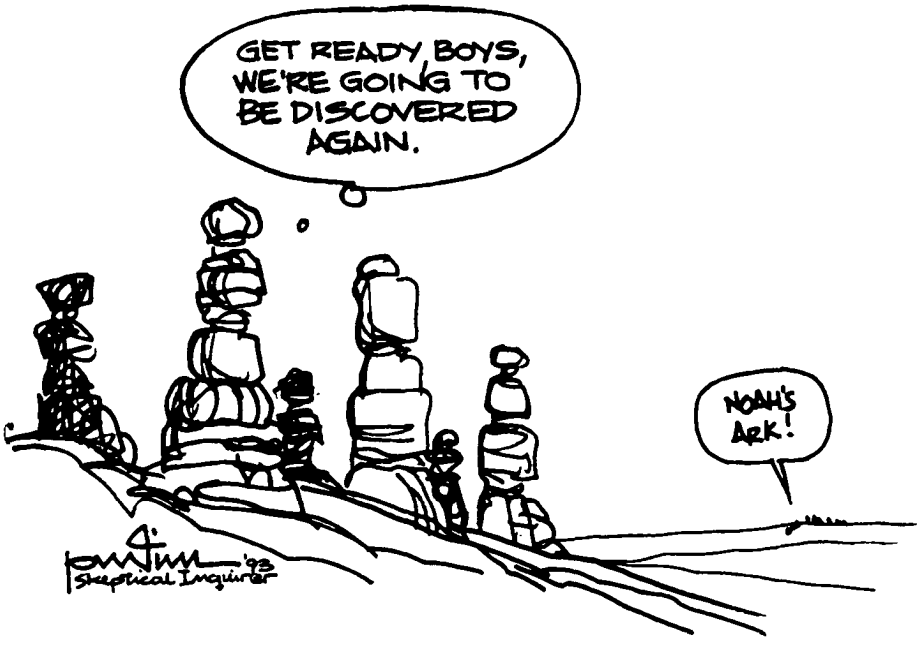
This past September, Jon Madison of Kenosha, Wisconsin, initiated his own search for extraterrestrial intelligence. He and about two dozen followers gathered in the cold and the rain at the Kenosha Veterans' Memorial fountain to attempt to draw down space travelers with his "UFO magnet," described as looking like a "chrome blender base, topped with a bent barbecue grill and a gizmo on top." Unfortunately, when the device was revved up to full speed, its "gizmo" detached and fell into the fountain.

Miss America contestant Kandace Williams, who was Miss Mississippi, told reporters that she is a human magnet and that abnormal ions in her blood can drain batteries. She also claims to be a descendant of Julius Caesar.

The latest New Age fade at the Whole Life Expo in Los Angeles was something called "ear coning," which is some kind of procedure for circulating the smoke from burning "medicinal herbs" through the ear canal. "Ear coning was used in Atlantis," allowing the chakras to be activated and the auric field balanced." Physical effects are said to include "improved hearing" (which is not difficult to believe) as well as enhanced breathing, keener color perception, and even "emotional stability." Nobody knows if it actually cures any ailments, but it costs $20 an ear.

* * *

Important news: The 1992 summer expeditions looking for Noah's Ark in the vicinity of Mt. Ararat in eastern Turkey once again found it, but unfortunately probably lost it again. The discovery of the Ark in 1991 was accomplished by creationist Allen Roberts, whose search was interrupted for several weeks when he was taken captive by Kurdish rebels. Upon his release, Roberts embarked upon a lecture tour, showing slides of what looked to the uninitiated like natural rock formations. He explained how wood can, under some circumstances, petrify very rapidly. He explained that the structure perfectly fits the biblical



dimensions given for the Ark, 300 cubits long and 50 cubits wide, provided that one uses the "Royal Egyptian Cubit" devised by pyramidologist Piazzi Smith in 1864.

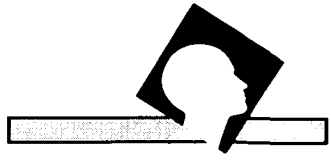
The 1992 discovery of Noah's Ark was allegedly accomplished by Roberts's colleagues, creationists David Fasold and Ron Wyatt, who have since parted company and are unable to agree as to what kind of evidence they found. Wyatt claims to have found a great deal of petrified wood, supposedly without tree rings. This, he explains, is because trees that grew before the Flood had no rings. Fasold, on the other hand, believes that the Ark was constructed out of reeds cemented together and that they have since decayed away. Both claim to have detected rows of corroded metal fittings by using something called a "molecular frequency generator."

However, John D. Morris of the Institute for Creation Research does not accept the findings of these maverick creationists. As he explained in the ICR's publication *Impact*, "Petrified woods from before the Flood *do* have tree rings," even though "the seasons may not have been as pronounced" in antediluvian times. Furthermore, he notes that not only are many of Wyatt's and Fasold's claims about their findings unsubstantiated and misleading, but their "molecular frequency generator, with its hand-held crossing brass rods, appears to employ the ancient art of divination—a practice thoroughly condemned by Scripture." Morris concludes: "Since the search for the Ark began in the 1940s, evidence has continued to mount that the remains of a barge-like structure still exist somewhere on Mt. Ararat in eastern Turkey. Unfortunately, none of these accounts have been substantiated by documentation. . . . For a variety of reasons, no one has been able to pinpoint the location." □

The following two articles plus interspersed shorter notes explore the burgeoning controversy over Facilitated Communication, a well-meant but much misused and misinterpreted technique intended to help autistic and other impaired persons to communicate.—Editor

Anguished Silence and Helping Hands: Autism and Facilitated Communication

JAMES A. MULICK, JOHN W. JACOBSON, and FRANK H. KOBE



Acceptance of a new procedure being used to reach developmentally disabled children is based on the emotional appeal of dramatic or easy cures, questionable science, and possible perceptual bias. Its claims cannot be independently scientifically verified.

The vulnerability of parents of handicapped children to offers of easy or miraculous cures is legendary among health professionals. Like most legends, this one has some truth to it. Parents are, in fact, astute critics of the professionals who work with their children. They react strongly to signs of professional aloofness or apparent disinterest or dislike and become understandably fearful at signs of indecision. They want intensely for their children to overcome the handicap, to grow out of it, to get some swift and effective treatment. They can forgive and forget aloofness or vague reasoning as long as help and hope are forthcoming. This transformation of distrust into trust can happen in the space of a single breath.

This is not abnormal. All parents want the little boy or girl they see before them to have a world full of promise and happiness, to grow into the kind of adult they can so vividly and lovingly imagine. Indeed, they begin nurturing dreams of the person their child will become from the time of their first knowledge of conception. Imagined details change with the passage of time and as experiences unfold, especially for parents of handicapped children as facts

about the handicap and resulting limitations become evident; but hope, like the child, is seldom abandoned. It keeps people going.

Parents of handicapped children spend much time visiting and listening to a bewildering variety of professional people who sometimes present conflicting information. Despite literature designed to improve parent-professional collaboration (Mulick and Pueschel 1983; Pueschel, Bernier, and Weidenman 1988), misunderstanding is commonplace, and ever-present stress increases miscommunication. Stress affects both parent and professional. Nothing can lessen the emotional shock for the parents who hear that their child has a significant disability likely to result in lifelong limitations. The anguish is profound and tends to be rekindled by everyday events, especially when hoped-for improvements are slow or fail to occur (Simons 1987). Professionals empathize easily at such times and may experience similar emotional reactions.

The destruction of what have been termed "highly valued dreams" by dismal facts produces predictable emotional results (Moses 1983). These include guilt, denial, and anger. Of these, only anger, and the aggression or hostility that can occur, has been adequately studied scientifically and understood in terms of its underpinnings in biologically based defensive reactions (e.g., Bandura 1973; Flannelly, Blanchard, and Blanchard 1984). The others, guilt and denial, are essentially cognitive phenomena. While less well understood, they represent highly reliable emotional effects of bad experiences, which also may have adaptive functions. Guilt may motivate problem-solving and independent action. Denial seems to work as a cognitive barrier to the perception of incapacitating or troubling thoughts that might impede an ability to get on with essentials of day-to-day living (Meichenbaum 1985: 74-75); it allows people time to revise their priorities.

Selectively screening out bad news through denial allows people to carry on with plans and relationships that would otherwise have to be abandoned, but which may serve other valued functions. Not believing something that is true also has a darker side. It allows people to go on doing things that could be, in part, bad for someone (including oneself). This is especially problematic when some aspects of continuing a course of action in the face of contradictory information are good for the denier, but bad for someone else. When this is the case, harm can continue for as long as the person doing the denying derives benefit from the thoughts and actions the erroneous beliefs permit.

Denial, a form of avoidant coping, is recognized as a common reaction to the diagnosis of a serious illness or disability in oneself or a loved one. Margalit, Raviv, and Ankonina (1992) demonstrated that parents with disabled children requiring continuous special education differed from demographically similar parents in their increased use of avoidant coping and that they exhibited lower confidence in being able to control and understand their world. Interestingly, a greater tendency to adopt avoidant coping strategies did not appear to prevent them from using active coping strategies (i.e., more direct problem-solving). Rather, families with disabled children used a greater mix of the two problem-solving strategies. Further, families whose disabled children had more socially disruptive behavior seemed to use more avoidant coping than families whose disabled children exhibited fewer socially disruptive acts. These findings also are

consistent with the effects of chronic stress on the selection of coping styles.

Autism

Autism is a severe developmental disability, fortunately uncommon, but prevalent enough to merit specialized educational and habilitative services for affected individuals in even medium-sized communities. It occurs in 4 to 5 of every 10,000 children (Kiely, Jacobson, Schupf, Zigman, and Silverman 1989; Pueschel et al. 1988). It is normally a lifelong disability, associated with mental retardation in about 60 to 80 percent of cases, defined by seriously delayed and often qualitatively abnormal language and communication, and strongly associated with frequent behavioral abnormalities. Common abnormal behaviors include social withdrawal; ritualistic, self-injurious, or odd repetitive acts; and higher rates of asocial or aggressive types of disruptive behavior. A single neurophysiological cause has not been identified for the syndrome.

An additional tragic fact is that affected children are often otherwise quite normal in appearance, bearing none of the physical deformities associated with many other developmental disabilities. Hence autistic children are sometimes described as "beautiful," probably a poignant reminder that except for their decreased ability to learn many types of things, to communicate, and to interact socially, they are initially as likely to evoke positive emotional commitment from adults as any other children.

There have been a few signs of improved scientific understanding of how to help autistic children learn to behave and communicate more normally (Lovaas 1987), but the necessary techniques are costly and demanding and not always effective. There is an active international research effort. Great strides have been made providing needed educational and medical services to these and all handicapped children in the United States (Pueschel et al. 1988). Still, there is no denying that anyone who works or lives with autistic children, especially when they are young, has the sense and the hope that with just the right nudge—or drug or treatment or environment or *something*—they will snap out of the syndrome and act as appealing and as normal as they look. Parents of autistic children must harbor such thoughts even more often than most of us; unfortunately, most autistic children simply do not snap out of it, or even improve, without much expense, training, and effort.

Parents of autistic children may be expected to employ avoidant coping styles more than most parents (Margalit et al. 1992) and to be highly motivated to obtain services that seem to help their children. For better or worse, these hopes are fueled by the implicit promise of our technological society and its cultural preference for hyping the amazing, the simple, and the ever more dramatic benefits of "discoveries" and "breakthroughs." This sets the stage for increased vulnerability to early adoption of untested and poorly conceived interventions and services.

Rescuers from Down Under

Enter Professor Douglas Biklen of Syracuse University with an imported miracle cure from Australia for the often utter failure of autistic children to learn to speak normally, a technique referred to as Facilitated Communication (FC). FC is "communication by a person in which the response of that person is expressed through the use of equipment and is dependent on the

Defacilitated Communication

Facilitated Communication is not cold fusion or N-rays. Professionals have advocated some form of what is now called FC for 20 years. The principle is unassailable: autistics have deficits in their communication skills and therefore require assistance to communicate—like providing paraplegics with wheelchairs to compensate for their inability to walk.

But the hard-core hysterics miss the point. They see FC not as a means, but as an end. The autistic, they say, will forever be dependent upon the facilitator. So even if the inflated claims for FC are true, what good is it? Unlike a wheelchair, one cannot take a facilitator along to school, to work, or on a family outing. Exchanging dependency upon a parent or caretaker for dependency upon a facilitator is no bargain for the autistic.

My autistic son is five years old. His teacher introduced him to FC at a computer keyboard several months ago, and he was delighted. He needed no facilitator—he was capable of picking out the letters on his own and stringing them into words.

But the charms of the computer paled when his teacher introduced him to an infinitely more powerful and flexible medium: pencil and paper. Now he happily spends hours printing and tracing words. He does not speak, but is learning to write. Once he spontaneously hopped out of his seat, went to the blackboard, and wrote "MARK IS HAPPY." His teacher wept.

FC is merely a stepping stone. The goal is *de*facilitated communication. The goal is empowerment.

—*Mark S. Painter, Sr.*

Mark S. Painter, Sr., is a freelance science-fiction writer in Mont Clare, Pennsylvania, and an attorney.

assistance of another person" (Intellectual Disability Review Panel 1988: iv). FC procedures involve using graduated physical (manual) prompting, in an initial least-to-most-effort hierarchy, with gradual reduction of guidance, to help a person point to or strike the keys of a typewriter, a computer keyboard, or a paper facsimile. The intent is to support a person's hand sufficiently to make it more feasible to strike the keys he or she wishes to strike, without affecting the key selection. In practice, the manual guidance is maintained indefinitely, suggesting an opportunity for the facilitator to exert continuing influence on key or picture selection by the person being facilitated.

Biklen has justified and advocated the use of this technique in the United States (Biklen 1991; 1992; Biklen, Morton, Gold, Berrigan, and Swaminathan 1992), an amazingly effective effort. FC has been given wide and relatively uncritical recognition in the popular press (e.g., Spake 1992; Whittemore 1992; in contrast to more skeptical treatment by Shapiro 1992) and scandalously credulous treatment in nationally televised news programs.

This "therapy" is currently used nationally with thousands of handicapped people each day at a likely direct cost of millions of dollars each month. Biklen has bolstered his arguments by developing a novel theory of autism based in reframing its root cause as a form of developmental apraxia (i.e., a disorder of voluntary control of movement). Scientific evidence for developmental apraxia in autism is lacking. Autistic youngsters are often characterized by *better*-developed motor than verbal skills, even real nonverbal problem-solving talent. This presents little conceptual difficulty for Biklen. He also appears to imagine that people with no prior evidence of acquiring letter-recognition skills can quickly begin typing out sentences of fairly complex grammatical structure, albeit with a little help from their facilitator, and indeed have had hidden literacy all along despite previous classification as severely mentally retarded.

A Feeble Professional Response

Speech pathologists are prominent in the clinical promotion of FC, especially via fee-for-service introduction of the basic procedures to parents and paraprofessionals directly involved in day-to-day care of people with handicaps. Two of the present authors (Mulick and Kobe) attended a presentation by a speech pathologist at a recent state autism meeting in Ohio. The speaker (Veale 1992) stressed that facilitators must enter the FC situation with complete trust and *belief* in the autistic person's communicative competence, with the intention that *together you can show others.*

Veale did not describe the FC training procedure in any detail. Apparently, you prop the keyboard up on an easel and hold the child's hand near the keys while having a verbal or typed conversation. In fact, procedural detail was specifically characterized as unnecessary for such a "simple" procedure. Additional points made: (*a*) Clients might not seem to be looking at the keyboard. (*b*) Interfering behavior problems might need to be opposed with just-right amounts of *physical force* to prevent movement of the learner's hand away from the keyboard. (It was implied that eventually, through FC, patients will thank you for doing so, as one of Veale's own patients communicated even while apparently trying vigorously to escape her grip.) (*c*) Because true communication is not composed of factual questions and answers but, rather, of open-ended alternating comments, one shouldn't ask factual questions in FC training; instead, one should just be receptive to what is produced by the handicapped individual.

Veale did not caution the audience about possible facilitator influence. She used testimonial evidence in the form of transcripts of FC conversations and a guest appearance by a grateful parent. Although statements made in conference papers are relatively ephemeral, they can have an inordinate impact on the practices of paraprofessionals and parents who may not be skeptical of obtaining unexpected literacy (especially when they are led to expect it by conference presenters). These features have little resemblance to the valid training in instruction for handicapped people that we have seen (Matson and Mulick 1991).

Novice FC trainees may not be well informed about how to teach or modify behavior. When the advice given is inconsistent, it will surely induce different practices by different trainers. Whereas these vague instructions encourage trainees to believe they need not require clients to look directly at the keyboard, Rose-

mary Crossley (1992a), the originator of FC in Australia, states that looking at the keyboard is absolutely necessary. Whereas the foregoing descriptions of benefit suggest that substantial progress can be obtained rather quickly, Crossley (1992b), Crossley and Remington-Gurney (1992), and Biklen et al. (1992) state that basic competence (e.g., some understandable content) may require up to six months. DEAL (1992) states that six years may be needed to attain communicative competence.

Unfortunately, no measurable definition of "basic competence" is provided. All sources reviewed by us that favor the use of FC mention some person with autism who demonstrated unexpected literacy upon the first try with FC. Transcripts of apparent conversational content are the only evidence provided (e.g., Biklen, Morton, Saha, Duncan, Gold, Hardardottir, Karna, O'Connor, and Rao 1991). We feel that the perceived unexpected literacy and sudden communicative competence is likely due to facilitator influence in most, if not all, such cases.

Scientific Evidence and FC

There has been no adequate controlled veridical support for any of the crucial claims made by FC proponents. We are aware of no demonstration that complex and meaningful linguistic performance, independent of possible facilitator influence, has been obtained from people who had been diagnosed severely or profoundly mentally retarded using valid methods by qualified diagnosticians. Complex linguistic performance is highly correlated with IQ and level of functioning in people with mental retardation and autism. We are aware of no evidence for rapid emergence of linguistic competence in individuals for whom a clear history of learning cannot be documented. We are aware of little support for a motor-impairment theory of autism. There is scientific evidence relevant to each point.

Because its claimed effects were so marked, so unexpected in the context of existing scientific knowledge, FC provoked academic research interest,

"At present, there are no scientifically controlled studies that unambiguously support benefits in expressive language function for people with mental retardation or autism by taking part in FC."

first by the government and others in Australia and recently by a few behavioral scientists in the United States. Studies in Australia used message-passing (giving information to a nonverbal person while the "facilitator" was out of the room, and subsequently attempting to verify the nonverbal person's comprehension via the typed content of FC) or question-asking directed to the disabled person with masking of facilitator hearing by white noise. While there were isolated instances of apparent valid communication through FC, a review by Cummins and Prior (1992) concluded that the responses of all people tested in these studies were contaminated by influence over content by the facilitators.

Another message-passing evaluation study in the United States (involving 23 people) reported that the validity of communications could be confirmed for *none* of the participants,

despite the fact that all were believed to be conversing with some degree of ability by facilitators and therapists (Szempruch and Jacobson 1992).

A controlled study involving 12 clients (believed by their caregivers to have been routinely communicating via FC for some time) and 9 facilitators, by Wheeler, Jacobson, Paglieri, and Schwartz (in press), was more explicitly revealing. In a procedure where two stimulus pictures were employed, Wheeler et al. (in press) show that clients responded accurately with labels of the pictures only when the same pictures were seen by the facilitators. Sometimes clients were shown the same pictures as the facilitators; sometimes the pictures were different. Clients responded "accurately" with labels of some pictures even when the pictures were seen by the facilitators but *not* by the clients, revealing that the typing was *controlled* by the facilitators.

In yet another study, the recommended training sequence for FC was used over 40 sessions with 21 young people with autism (Eberlin, McConnachie, Ibel, and Volpe 1992); the technique produced no unexpected literacy, and no client was able to better his or her measured expressive language skills using FC over the level that was obtained using controlled testing of these abilities verbally. At present, there are no scientifically controlled studies that unambiguously support benefits in expressive language function from taking part in FC for people with mental retardation or autism.

There have been controlled research studies of very successful communication training in toddlers and preschool-age children with autism using conventional methods (e.g. Lovaas 1987), more limited but still successful reports of speech improvement in older children with autism (Schreibman, Koegel, and Koegel 1989), and growing recognition of effective nonspeech communication approaches. The use of computers with adapted input devices and electronic, printed, or synthesized speech output is well established with motor-impaired people (e.g., Cory, Viall, and Walder 1984; Demasco and Foulds 1982; Mulick, Scott, Gaines, and Campbell 1983). Appropriately configured and adapted computers have long been useful as instructional devices, communication tools, environmental control systems, and game platforms with special populations (Vanderheiden 1982), just as they are for everyone else. Other communication systems successfully used by people with autism include manual sign language and picture or idiogram-based systems. Clearly, the issue is not how communication is mediated, but whether or not it is controlled by someone else, whether or not there are at least two independent participants in a communicative transaction.

Motor Apraxia in Autism

The FC perspective directly challenges neuropsychological and linguistic perspectives, founded in a large body of scientific research, about the language of autistic people. Language is complex and involves elaborate neurological substrata. The speech and language of autistic people differs greatly from that of other people, presumably as a result of neurological impairment. While understanding of the spoken word by autistic people is consistent with their general intelligence, they tend to retain and use the meaning of what is said to them differently, without some of the social information that normally accompan-

ies language and that occurs without much effort for the average person. For example, people with autism who can talk have difficulty sharing nuances of meaning that involve taking another person's perspective. They also have difficulty expressing their emotions and accurately attributing emotions to others. These features greatly affect what autistic people say, how they say things, and in some ways, what they mean by what they say. The language of people with autism who have normal intelligence (and quite a few do) is more concrete, sometimes esoteric, and more oblique compared to the average person. The language of autistic people previously diagnosed with severe mental retardation, but now using FC and cited as examples of success, in contrast, is often rich in interpersonal subtleties well beyond the aspirations of many college English majors (but perhaps not beyond those of philosophically inclined teachers or therapists with master's degrees who promote FC).

How is all this viewed by FC proponents? The motor-impairment perspective on language function set forth in writings on FC is based on the concept of motor apraxia. Apraxia refers to the neurologically determined inability to voluntarily initiate behavior or movement (because one cannot "figure out" how to move). In contrast, the term *aphasia*, which was once the term used for problems in language, now is reserved for more strictly cognitive or conceptual problems in using language. Champions of FC believe that people who have autism are not affected by aphasia but, rather, by apraxia, which involves the neurological substrate of the movement system for organizing or performing speech. At the same time, they argue that autistic people have problems "finding" the words (especially nouns), which should be called dysphasia, and speaking the words, dyspraxia.

"In a procedure where two stimulus pictures were employed . . . clients responded accurately with labels of the pictures only when the same pictures were seen by the facilitators."

Neurological terms have specific meanings. What is described by FC proponents refers to difficulties, rather than inabilities, of people who are considered autistic, in using words in certain ways. The quandary in trying to understanding the propositions that proponents offer, in a largely post-hoc fashion, to explain the disorder and why FC is needed is complicated by the fact that they seem to confuse terminological distinctions. The prefix properly related to "difficulty" is *dys*, not *a*. If neuroscientists were to offer the same arguments that are set forth in articles advocating FC, they would consistently use the terms *dysphasia* and *dyspraxia*.

There is a great deal of evidence that what autistic people say intrinsically reflects the social character of much of their unusual behavior, how they seem to regard other people, and some features that might accurately be described as specific dysphasia(s) and specific vocal dyspraxia(s). Nevertheless, neurophysiological research has not yet demonstrated even a firm basis for a specific dysphasic disorder. However, aside from using terms that, as they are normally used, do not apply to the effects of autism on how people speak, FC proponents further suppose "global apraxia" characterizes autism: that affected people cannot voluntarily initiate movement. The usage

error, again, is that they mean autistic people only experience difficulty. Further, there is no research evidence at all to support the position that people with autism experience such global problems. The usual clinical finding, familiar to any psychologist who routinely works in this area, is that motor impairment and delay is much less prominent than communication disorder and delay (Jacobson and Ackerman 1990). In fact, when playing quietly, or simply walking or using a climbing toy, their relatively smooth and coordinated movement and lack of physical deformity is part of the reason autistic children look so appealingly normal and kindle such general interest and hope.

Surpringly, although the media and disability advocacy groups have greatly promoted FC, little fundamental opposition by professionals to FC has emerged. Very little criticism has been voiced within developmental disability service agencies or regulatory bodies. Many seem to view FC as the greatest breakthrough of all time, the very breakthrough for which advocates interested in full integration of all handicapped people have been waiting so that no one will, by virtue of inability to express themselves, be deprived of a place in society. Many in disability services, who might be critical, understandably hesitate to be, probably for fear of rejection by those involved with FC every day at their place of work.

Why, at the same time, there has not been an aggressive and visible reaction by professional and scientific societies in medicine, psychology, and neuroscience is more difficult to explain. There are numerous pressing issues facing professionals and scientists in their own fields, many involving funding and competition for resources. It may also be that large portions of these professional and scientific groups have abandoned issues related to people with chronic disabilities, whom they cannot cure, to the human service organizations and government agencies that vocally and confidently present themselves as meeting all disability needs. At the same time, toleration of marginal standards for care and quality by the learned professions serving disabled people does everyone a serious disservice. Ineffective services can be costly, unnecessarily increasing the strain on the nation's health budget. Further, it represents indirect support for the prevalent belief among growing segments of the public that health professionals and scientists are not truly to be trusted.

Conclusion

There is good reason to be skeptical of extravagant claims made for FC. Our impression is that, at best, it represents a false ray of hope for many families. Many parents and empathic, concerned paraprofessionals might be especially vulnerable to the appeal of FC because of avoidant coping styles or the action of cognitive denial mechanisms that reduce perception of some features of severe disability in others.

The promotion of FC diverts effort and funding from more plausible long-term strategies that have empirical support. The theoretical confusion gratuitously injected into the research and professional literature by FC proponents is damaging to accumulation of knowledge about handicapping conditions and their causes and detracts from the credibility of sincere efforts to integrate findings about abnormal development. The popular confusion of FC with other nonspeech communication systems that have been used successfully with disabled people will discourage public support

for these tried-and-true strategies when the FC bubble bursts. And burst, it will. In the end, regret will provide small solace. The irony of FC is perhaps best revealed by a poem reproduced in the Fall 1992 issue of *The Advocate*, a newsletter of the Autism Society of America (p. 16), a poem that won recognition for its author, identified as a 26-year-old youth with autism. The poem (despite its spooky resemblance to an old Beatles song) was said to have been produced via FC. Two lines, in particular stand out; it begins, "I am you, and you are me. . . .", and goes on, ". . . We are each other as we are what We can be. . . ."

The professional and scientific communities, as well as government human service and regulatory agencies, should not allow people with handicaps and their families to be used by a few professors and therapists who stoke their hopes with empty promises, regardless of their sincerity, while reaping personal or political rewards and working hard to prevent systematic verification of their claims. Such practices should always be called into question. In our experience, people with handicaps can be valued members of their families and communities without resorting to appeals to miracle cures. There is effective help available, help that makes scientific sense. The genuine efforts of scientifically trained and compassionate professionals surpass all fad treatments, and always will. Advances in treatment and understanding come at the price of rigorous training, dedication to accuracy and scientific standards, and objective verification of all treatment claims.

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Facilitated Communication, Autism, and Ouija

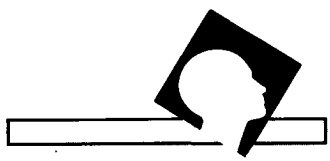
KATHLEEN M. DILLON

Facilitated Communication (FC) is a technique that allegedly helps persons who are unable to communicate, or who have limited communication skills, to communicate better, sometimes at a level far exceeding their presumed abilities. It is claimed that what is needed is a facilitator, someone who typically supports the subject's pointing finger—or hand, wrist, elbow, or shoulder—and a list of letters, numbers, words, or characters. These symbols can be on a piece of paper—one with a laminated or smooth surface is preferred—or on a computer or typewriter keyboard. One device that has gained popularity for FC is the Canon Communicator, a small, portable electronic keyboard with a tape printout.

This technique was developed in the 1970s by Rosemary Crossley and her associates at the Dignity Through Education and Language (DEAL) Communication Centre in Melbourne, Australia, for work with people with cerebral palsy. It was introduced into the United States by Douglas Biklen, director of the division of special education and rehabilitation at Syracuse University.

FC is now being used as a communication aid for individuals with autism—a serious disorder often characterized by multiple and profound problems in cognitive reasoning, communication, and socialization skills—with claims of miraculous results.

In one case, a mute young girl, apparently with no awareness of the meaning of money or the significance of holidays and presents, allegedly typed out that she didn't like Christmas



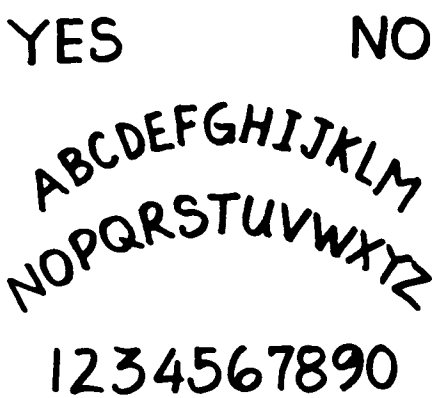
The end product of Facilitated Communication appears to be nothing more than the old Ouija effect.

because she didn't have the money to buy her mother a present. It has been reported that in other cases individuals who had previously been unable to read or write or cipher found themselves in college classrooms typing out their exams with their facilitators.

Although FC has been criticized as being nothing more than a phenomenon of the Ouija board type, Biklen argues that messages produced often have typographical errors, phonetic spellings, unusual utterances, and content unfamiliar to the facilitator. These and similar arguments actually serve to further the case that FC and Ouija are quite similar if not identical.

This article will elaborate on the parallels, as I see them, between Ouija and FC. My information on Ouija comes primarily from a text by Stoker Hunt (1985), *Ouija: The Most Dangerous Game.* The examples of FC provided here come from two training sessions I attended that were conducted by Biklen's associates for parents of individuals with autism.

First, FC and Ouija share many of the same physical components. Both typically use a board with alphanumeric characters. Although a Ouija board can be easily purchased, Hunt includes an illustration of a hand-drawn Ouija board that can be used and also reports cases of Ouija being performed on typewriters or simply with pencil or pen on blank paper (with messages using the latter tools usually referred to as automatic writing). This is also the case with FC. The other component of both classical Ouija and FC is a pointer. In the case of Ouija, traditionally a small three-pointed planchette is used with the fingers resting lightly on it; however, anything can be used that can slide over the surface of the board with the subject's fingers resting on it. For example, Hunt suggests using an inverted juice glass. In the case of FC, the pointer is the finger of the subject, and the facilitator lightly supports that finger or some part of the subject's arm.



A hand drawn replica of the printing on a Ouija board.

In Ouija, the subject may have his or her eyes closed (especially in the case where a second party is also in contact with the planchette); Hunt says that some people can perform Ouija while engaged in other activities, such as talking or reading. In filmed accounts I have seen of FC with autistic individuals, the subject often appears to be focusing attention everywhere but on the keyboard or list.

In both Ouija and FC, and this is a critical point, the facilitators or the persons using the planchette swear they are not guiding the pointing, but that the movement comes from something other than their own volition. In the case of FC, the movement is said to be coming from the subject; in Ouija, it is said to be coming from either a spiritual realm or the subject's unconscious. Facilitators have told me that until they tried FC for themselves they too were skeptical, but that once they tried it they knew the source of the movement was definitely not themselves. People who use the Ouija board (as well as people who have

participated in table-turning at séances, or who have used pendulums or dowsing rods) have also sworn, even on their lives, that they are not the source of the movement.

James Randi (1986) writes that there are two kinds of people claiming to have special powers, those who honestly believe they have these powers and those who are outright fakes. From all I have seen of FC, I believe the facilitators are honest and sincere and are not consciously or deliberately engaging in deceit. However, just because the facilitators have the sensation that the movements or messages are not originating from themselves, this does not mean that they are not.

This is a hard reality to grasp. Faraday, as early as the mid-1800s conducted experiments demonstrat-

ing that the pressure on moving tables in séances came from the operators. Similarly, Randi has explained how, despite strong sensations to the contrary, the movement of dowsing rods can be explained simply as the effect of a physical system under tension. These sensations are illusions, and powerful ones. In all these cases, it comes down to a matter of a lack of understanding rather than intentional fraud.

My sense is that in FC the movement may indeed come from the subject as a conditioned response, but that direction to a particular letter comes unwittingly from the facilitator. (Subjects are at first very resistant to pointing, but M&M's or other reinforcements are sometimes offered to get them to begin; and once the messages start coming, the ecstasy of the facilitator over the response of the subject is probably a potent reinforcer.) Facilitators argue that they are not conscious of the messages before they are typed, and I don't deny this. It is another parallel between FC and Ouija.

With FC, the messages are often much more complex than a single thought. They are sometimes said to come so fast and are sometimes so lengthy that they could not possibly have been generated by the facilitator. This same argument has been raised with Ouija. In one extraordinary case, Pearl Curran was able over a five-year period working with the Ouija board to dictate 29 bound volumes (4,375 single-spaced pages) of conversation in the form of epigrams, poems, allegories, short stories, plays, and full-length novels. For one of her novels, she was able to dictate the last chapter of 6,000 words in a single evening through the Ouija board. When asked about the Ouija board, Curran replied that it was "just a piece of dead wood, nothing more. It is I who move the board, in response to the subconscious or conscious impulse. There is no mystery in the movement; the mystery, if any, is in the source of the impulse."

For both FC and Ouija, it is alleged that the "energy" must be right in order to have things work. In FC, the argument is often made that a skeptic cannot be a facilitator, or that the subject cannot perform in a testing situation. It is also reported that the subject sometimes cannot have a parent as the facilitator, "because the parent is for love," "because the parent can't be trusted," or for various other reasons.

In Ouija, the explanation for the effect is either that another spiritual world has been contacted or that the messages are coming from an unconscious or preconscious level of the subject. In FC, no explanation has so far been offered, although often the process is referred to as magical or it is said that no explanation is needed if it works.

The argument has been used that because the messages often contain typographical errors, phonetic spellings, or unusual utterances, it cannot be the facilitator sending them. However, compare this claim to the observations of James Merrill, who used Ouija to compose poetry: Hunt (1985) says: "Merrill describes the originals as looking like the compositions of children, all 'drunken lines of capitals lurching across the page, gibberish,' until punctuated and divided into words, sentences, and paragraphs."

The messages in both cases are interpreted post hoc. Once a message is received, its meaning is looked for. For example, in FC, the message "ju" was interpreted as the word "juice" when a boy with autism was asked what he had for breakfast. In another example, "ju" was interpreted to mean "jump" in response to the question,

The FC Experience

In January 1992, Catherine Koffs, her husband Steve, and their three-year-old autistic daughter, Missy, attended a Facilitated Communications (FC) workshop in Philadelphia. They paid $250 to attend a lecture and private FC session.

Koffs reports that the facilitator held Missy's right hand inside her own, with only the child's limp index finger protruding. Missy allegedly answer the question "What is your name?" by typing "MITSSTY" on the alphabetic keyboard.

"It looked like the facilitator was doing the typing," says Koffs. With FC, Missy also identified 'BILG BIRD," and her sister, "JENNZ" (Jenny). She also asked for a "SNAC." "That still bothers me," Koffs says. "We didn't use the word 'snack' around the house. That's not a Missy word; that's a teacher word." But the facilitator suggested that the young child "has been reading for a long time" and "knows a lot."

Despite her initial skepticism, Koffs wondered if she had witnessed a miracle. "I loved it," she says. "I walked out of there thrilled." But the thrill faded over time, as Missy's parents proved unable to reproduce the facilitator's dramatic results, despite painstaking efforts. Missy shows no interest in the alphabet, let alone evidence of an ability to read.

Catherine Koffs, like many parents and professionals, continues to believe that "there's something to it," but describes the persons conducting the workshops as "zealots" and "true believers." "It looks fishy," she says, echoing many others.

—*Mark S. Painter, Sr.*

"What do you want to do today?"

Similarly, in both cases, successes are noted and "failures" ignored. By trying and discarding "wrong" answers, the facilitator can eventually hit upon the "correct" one. This is not as impossible a task as it may seem if you realize that individuals with autism often have incredibly limited repetoires. I know one boy who eats spaghetti and meatballs for dinner every day. In the case regarding the guess that "ju" stood for juice, this boy usually had only one of two drinks for breakfast—water or juice. Typically the facilitator is someone who has worked with the autistic person in other contexts. To claim that the facilitator did not suspect that this boy might have had juice would be begging the question. Interestingly, the boy did not have juice or water for breakfast that day, his mother told me. He had rhubarb pie! She had said nothing about this earlier, however, because she didn't want to embarrass the facilitator in public, she said.

It is hard to test whether or not a facilitator has had prior knowledge relating to a particular message or answer. Again, facilitators may often have knowledge without being aware of it. One way to test the foreknowledge factor would be to set up a situation in which the person with autism would know the correct response, but the facilitator would not. The messages tested would have

FC and the Parent

Professionals are very quick to dismiss the abilities of autistics. Our children are often tagged with the additional label of "mentally retarded." Parents know better. We *live* with autistics. We see their sly smiles, the gleam of intellect in their eyes, and their astute problem-solving skills. We see when the "nonverbal" autistic child perks up at the mention of the word "cookie," or spontaneously breaks out into song.

So when Facilitated Communication (FC) proponents say they have found a way around the wall, parents are quick to believe. FC confirms our faith in our children. But . . .

The workshops and sessions can cost $250. The equipment $800 more. And what do we get for our money? Parents themselves "can't facilitate," they tell us. Our children will require FC for life, they say, and will never communicate on their own. If a parent has the temerity to ask the child a question the facilitator does not already know the answer to, the parent may be told that "autistics don't like to be tested," or that testing is against the FC "philosophy."

In short, the price we are asked to pay in an effort to communicate with our children is to allow strangers into our families to mediate our relationships with our own kids and to accept everything the stranger tells us on blind faith.

—*Mark S. Painter, Sr.*

to be of a simple nature that could be independently verified. Proponents of FC argue, however, that facilitation does not work in a testing situation. Catch 22!

Another interesting point about FC messages: These messages are often given more credibility than the utterances or behaviors of the subject. In one case, a child was asked if he liked ice cream. He said no, and then physically objected to eating it. But the facilitated message read "yes," and the facilitator concluded that the boy really did like ice cream but was just acting stubborn.

The arguments that Ouija can be taken simply as a form of entertainment and that it can't hurt to just try FC whether you believe in it or not are similar. However, the no-harm contention is simply not true—both Ouija and FC have the potential for harm to the subject and to others. There is a seductive quality to both techniques that can lead to obsessional and exclusionary activity. Writes Hunt (1985): "The more suggestible a 'player,' the more dangerous the Ouija game. In the early stages of obsession or possession, its victim becomes increasingly reliant on the Ouija Board. He craves more and more revelations. Soon the messages become the experimenter's sole interest. Normal activities and relationships become less important and even boring. The victim feels alive and alert only when working with the Ouija Board." A similar phenomenon takes place when FC is used for individuals with autism. There is a passionate excitement associated with the "discovery" or notion that a person often thought to be retarded may in fact be a genius who just needed a way to

communicate. One mother said she was skeptical, but once you start, you can't go back. Another mother said her daughter asked via FC for a hiatus from all other forms of education until she found herself. Other mothers at the meetings asked how they could get FC as part of their child's IEP (individual education plan). Another woman is dropping all behavioral techniques for her son in favor of FC. "They didn't teach him how to read or write after five years of behavioral training and he shows he did this on his own with FC," she complained. "So why go back to behavioral techniques?"

It should be pointed out, however, that the consensus among scientists is that so far behavioral techniques are the only methods that have shown any success with changing for the better the behaviors of individuals with autism.

Rimland (1992), in the *Autism Research Review*, reports several cases of misuse of FC that have led to disasters for some families in the United States and Australia. "In case after case, poorly trained, overzealous facilitators have uncovered, they believe, evidence of child molestation by family members. They report the parents to the authorities and then the nightmare begins." Some cases have been dropped at pretrial stages, but others have involved lengthy legal trials, and some are still in court.

In one interesting case of alleged abuse uncovered via FC and reported in the *Autism Research Review* (6[1], 1992), FC was tested by an independent agency under a number of conditions: (1) The subject and the facilitator could hear the questions. (2) The facilitator heard music through headphones while the subject heard the questions. (3) Both the facilitator and the subject, wearing headphones, sometimes heard the same questions and sometimes different questions. In the first condition, the subject got 8-9 of 10 correct. In the second condition, she got none correct. In the third condition, she got 4 out of 10 correct when she heard the same questions as the facilitator; but none of her responses were correct when she heard a question different from the one the facilitator heard. However, four of these incorrect answers were the correct answers to the questions received by the facilitator.

Why is Facilitated Communication being accepted so uncritically by the families of autistic children? Certainly the answer lies in the fact that autism is viewed in catastrophic terms. In many studies comparing the stress caused by having a child with autism with that of having a child with Down's syndrome or a terminal disease, autism always ranks highest. It is extremely difficult to be the parent of an autistic child; I know from empirical studies, and I have experienced this anguish in my personal life. There is nothing I would like more than to have FC work as it is claimed to work. But unfortunately, not only do these powers not hold up under examination, they may lead one down a dead end or even a perilous road.

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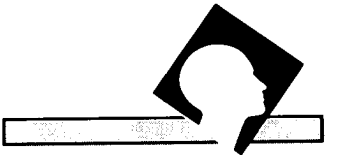
Treading on the Edge: Practicing Safe Science with SETI

DONALD E. TARTER

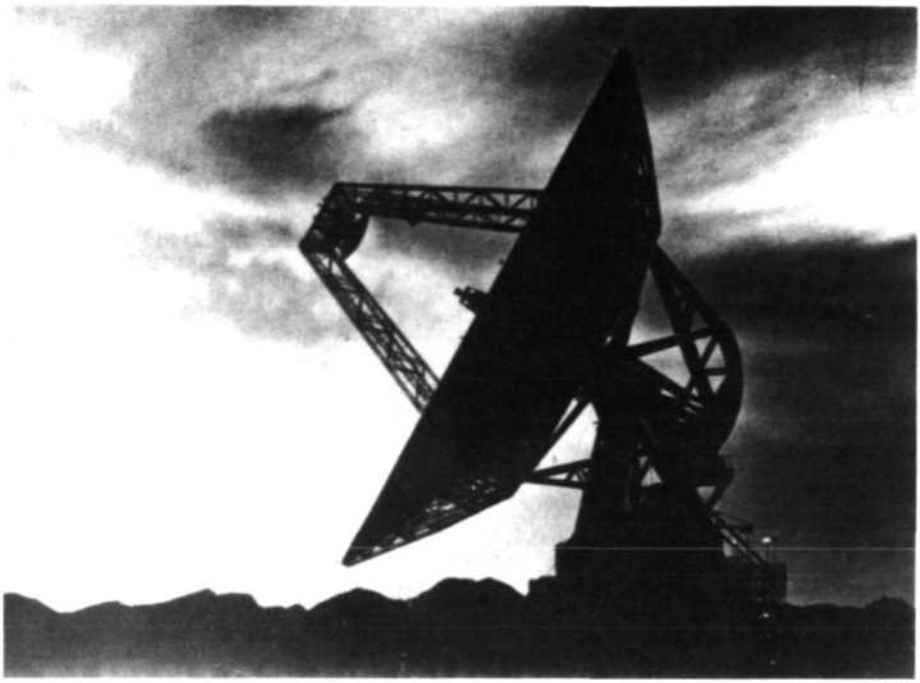
For those of us in the diverse entourage of individuals who have worked to promote the search for extraterrestrial intelligence (SETI), October 12, 1992, the five hundredth anniversary of the first voyage of Columbus to America, represented a step into a new age. On that day, two of Earth's great hearing aids, the giant radio telescopes at Arecibo, Puerto Rico, and Goldstone Tracking Station, California, turned on to begin the most powerful search yet mounted to find out if we are alone in the universe. This NASA-sponsored search joins other searches, such as those by the Planetary Society and the University of California, Berkeley, to give a massive boost in search space and sensitivity.



When you search for aliens with public money, good mental hygiene is essential.

The megachannel extraterrestrial assays (META) searches sponsored by the Planetary Society, which began in 1985, were extremely powerful for their time. Now, however, these searches are dwarfed by the capacity and sensitivity of the NASA search. The opening ceremonies at Goldstone were given an added air of excitement by Carl Sagan's revelations that the META searches have revealed a small number of tantalizing signals that meet all the criteria of an ETI signal except the absolutely essential necessity of repeatability. The coordinates of these events have been given to the NASA team to investigate with their far more sensitive instruments.

The path to this point for the NASA search has been long and frustrating. SETI stands at the edge of established physical and biological



Radio telescope at Goldstone Tracking Station, California NASA

sciences. SETI's recent history has been one of fighting for scientific respect and then fighting for funding. Right up until the most recent budget was passed, budget-cutting congressional members hunted for a federal program they thought could be eliminated. SETI has been so frequently ridiculed and singled out as such a program that officially SETI no longer exists. Shortly before NASA's current search began, the space agency announced that the program's name had been changed to the High Resolution Microwave Search (HRMS)—a mumbling sort of acronym that can't be pronounced. NASA has often been described as the agency that made the greatest human adventure in history—going to the moon—boring. It seems they may be trying for that distinction again. At the dedication ceremonies, Sagan quipped that he hoped some of the signals META discovered would be "H-R-M-S Positive." In a slight act of rebellion against NASA authority, in my writing I shall continue to refer to the program by its better-known acronym SETI.

SETI's credibility within the scientific community has steadily increased over the past few decades, but it still has many outspoken detractors. Even the detractors, however, seeem to have a basic fondness for the program. Zen Faulks, a University of Victoria biologist, in a dismal assessment of the prospects of a SETI discovery recently stated in the SKEPTICAL INQUIRER:

> . . . The incredible improbability of alien intelligence should be taken into account when deciding how much of our effort SETI should occupy, but I would be disheartened to see the search stopped. . . . The fallout for all the sciences, especially the biological sciences, would be so gargantuan if we did contact an

> alien intelligence . . . that it seems foolish to abandon the entire affair. SETI remains an intellectual game worth playing, even if only on a small scale. (Faulks 1991)

Among the general public, little is known about this exotic electronic endeavor; and of those who express interest, many are from fringe groups. Among the knowledgeable general public there exists a strong tinge of skepticism that such an enterprise is serious, and there always is a common questioning as to whether the endeavor is worth funding with public money.

We in the SETI community often feel our marginal status, even in our closest personal relationships. My own mother, for instance, steadfastly refuses to discuss my professional interest with her friends, lest they think something is wrong with me. I have colleagues who smile and nod tolerantly but keep their intellectual distance when the subject is mentioned. If you are actively engaged in the SETI enterprise the burden is on you to demonstrate that you are a responsible member of the scientific community.

Many in the scientific community regard SETI as similar to AIDS, as a potentially lethal infection. I maintain, however, that the SETI virus is not necessarily fatal to one's scientific standing. SETI scientists, recognizing the risks of their passions, have taken great care to practice "safe science." In many ways they have been more scientifically cautious than colleagues in other disciplines. The unwritten rules that have emerged in the SETI enterprise bear a striking resemblance to the rules for safe sex. Just as with safe sex, these rules may be hard to follow; but when you are hunting for aliens, being careful is the only way to ensure your scientific survival.

Abstinence

Just as with abstaining from sex, abstaining from interest in aliens does not seem to be very popular. The quest to answer the question "Is there other intelligent life in the cosmos?" is a primal intellectual interest. In earlier decades, abstinence from the search for alien life-forms was easier for astronomers. Outside of the limited visual abilities of their optical telescopes, there was simply no way to deal with the issue scientifically.

In the early 1930s, Karl Jansky, of Bell Laboratories, began to develop radio telescope technology. With this technology a new means of assessing the cosmos came into being. It was not until 1959 that serious suggestions were made to use this technology to search for extraterrestrial life. In that year, the seminal article in *Nature*, by Giuseppe Cocconi and Philip Morrison, titled "Searching for Interstellar Communications" was to begin modern SETI. As is often the case in science, without knowledge of Cocconi and Morrison's suggestion, a young radio astronomer named Frank Drake used the 85-foot dish at the National Radio Astronomy Observatory in Greenbank, West Virginia, to search for signals from two nearby stars, Epsilon Eridani and Tau Ceti. In SETI lore this is known as the famous project "Ozma."

Two decades later, the development of modern computerized multichannel analyzers made possible large-scale attempts to monitor radio emissions from space. As the number of channels available for analysis became greater, the search became more credible in terms of the probability of discovery. By the 1980s, the scientific and technological groundwork for sophisticated SETI was available.

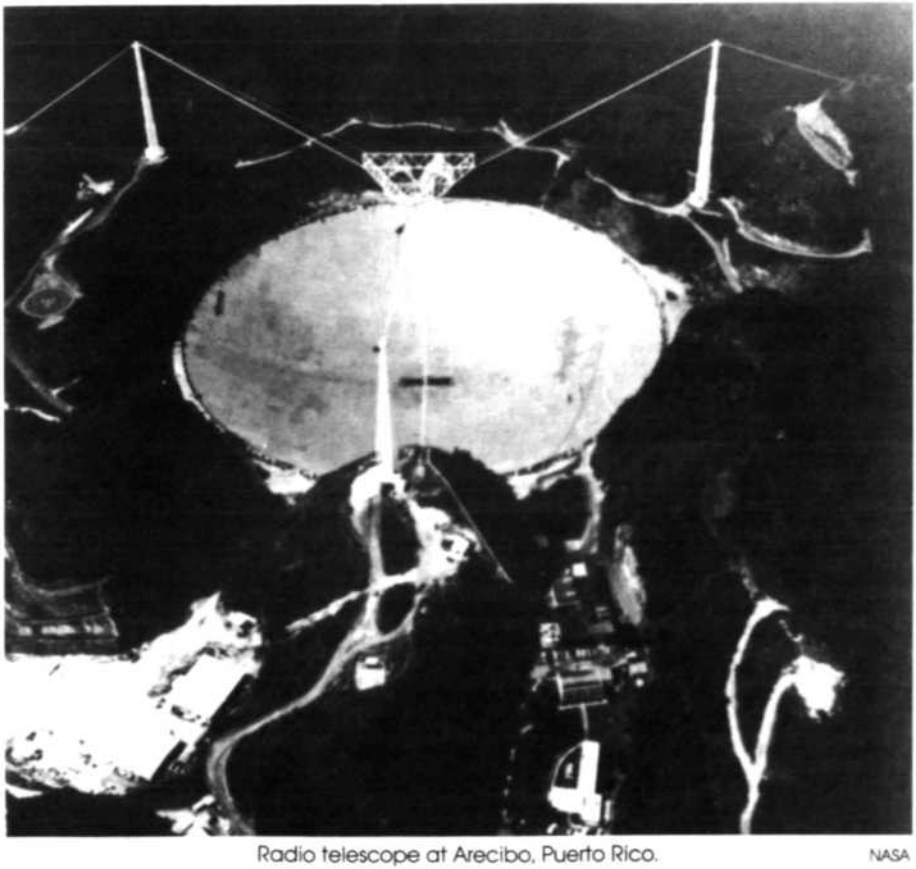
The cultural groundwork had also

been established for the project. Scientists like Carl Sagan, Arthur C. Clarke, and Philip Morrison stirred interest with their talks and writings. Stanley Kubrick and Arthur C. Clarke's *2001: A Space Odyssey*, Stephen Spielberg's *ET: The Extraterrestrial*, and Sagan's science series *Cosmos* on television are but a few of the major media events that helped shape cultural interest in the subject.

Meanwhile, in NASA, diligent work by John Billingham, Barney Oliver, Sam Gulkis, Mike Klein, Jill Tarter (no relation to the author), and other scientists, helped overcome internal resistance to a SETI program. The same individuals, with the help of many others, later led efforts to secure funding from Congress.

In the international astronomical community, interest continued to grow. In 1982, Commission #51, the Bioastronomy Commission, was established in the International Astronomical Union (IAU). Boston University astronomer Michael D. Pappagiannis led this effort. From its initial size of about 150 members, it has grown to nearly 300, making it one of the largest commissions within IAU.

Unfortunately, there is a sad similarity between the SETI revolution and the sexual revolution. Just when we thought we were about to learn the "joys of sex" in a sexually emancipated society, the pandemic of AIDS appeared. In the SETI revolution, just as SETI scientists were beginning to learn the joys of being a federally



Radio telescope at Arecibo, Puerto Rico. NASA

funded program, one of the greatest budget crises in the history of America appeared. Tax-supported scientific programs are coming under increasingly harsh scrutiny. The slightest indiscretion may produce ominous results. Sex and SETI are no longer just fun and games—they are potentially lethal if not practiced with great care. Safe science with SETI is not just desirable, it is essential.

Be Careful with High-Risk Groups

SETI and the Air Force have a common problem—UFO enthusiasts. Before the days of sophisticated SETI searches the Air Force was the prime target for UFOlogists. The continuing insistence that the Air Force "knows something," or is "hiding something," with respect to alien life-forms has a life of its own. Proving the negative case is impossible. Now that SETI is getting serious, it is likely that this type of annoying attention will shift toward the international radio-astronomy community.

In order to be "politically correct" (i.e., fundable), the last thing in the world SETI scientists want is to be identified with UFO interests. The suspicion that SETI was somehow part of the "UFO thing" led former Senator William Proxmire to give the 1979 SETI budget request the great Congressional "booby prize," his famous "Golden Fleece" award. Even though Carl Sagan was eventually able to enlighten Senator Proxmire, leading him to withdraw his opposition to SETI, many would-be Proxmires have staged a perennial procession of similar charges in virtually ever budget hearing since. Is there any wonder that SETI scientists are touchy about the UFO issue?

Freeman Dyson, one of the many prominent figures associated with SETI, dismisses UFOs as "mythical animals . . . the contemporary reincarnation of phoenixes and unicorns" (Swift 1990:323).

The radio astronomer Charles Seeger, longtime SETI advocate, has stated a more moderate position with respect to UFOs: "I don't . . . call it nonsense, because I think it is a fascinating aspect of humanity. But there is no reasonably respectable evidence that we are being visited by extraterrestrials. . . ." (Swift 1990: 302).

Jill Tarter, chief project scientist at NASA Ames, perhaps best summed up the tough-minded approach to the UFO subject taken by most SETI scientists when she said: "I have an open mind on whether anyone has seen anything that has a reality to it; a closed mind on the idea that what has been seen is a manifestation of extraterrestrial visitation, and an absolute demand that people who are pursuing this subject attempt to treat this the way we would any other scientific investigation, and that is to arrange for hard, reproducible, believable evidence" (Swift 1990:371).

This sort of hard-nosed, no-nonsense approach has made the task of keeping distance from the high-risk UFO groups easier. According to Seth Shostak, public programs scientist at the SETI Institute in Mountain View, California: "UFO groups almost never ask us to speak to them. They avoid us. They know our approach to the issue and leave us alone."

Avoid High-Risk Behavior

In recent years there has been much ado about new-age science and insights based upon emerging new paradigms. Supposedly, these new developments will rattle traditional science to its roots. The framework of theoretical discussion in SETI, however, remains firmly rooted in the

Interstellar Contact Will Enrich Our Lives

"Now, after all our efforts over the past three decades, I am standing with my colleagues at last on the brink of discovery. . . . I see a pressing need to prepare thinking adults for the outcome of the present search activity [NASA's new formal SETI mission, scanning for signals from a million stars or more at a time]—the imminent detection of signals from an extraterrestrial civilization. This discovery, which I fully expect to witness before the year 2000, will profoundly change the world. . . . Interstellar contact will enrich our lives immeasurably. . . . I want to nurture people's yearning curiosity about the beings who will no doubt contact us. At the same time, I want to quell the misleading myths about extraterrestrials, from the mistaken belief that they have visited us in the past, to the terrifying idea that they will wrest the future from our hands."

—*Astronomer and SETI pioneer Frank Drake, in Frank Drake and Dava Sobel,* Is Anyone Out There? The Scientific Search for Extraterrestrial Intelligence *(Delacorte Press, 1992)*

classical tradition, and those roots haven't been rattled yet. Speculations of a quasi-mystical nature among SETI scientists are rare.

Classical science rests upon three basic assumptions about the universe. First, the cosmos can be explained without reference to supernatural or mystical entities or forces that occupy a realm different from and inaccessible to occupants of physical reality as we know it. This is the principle of naturalism. A second basic assumption is that we live in a determined universe where cause and effect are operative at all levels, except perhaps the subatomic one. This is the principle of determinism. Finally, through careful observation of the physical world, we can come to know and, in many cases, predict and control its dimensions. This is the principle of empiricism.

SETI has traditionally rested firmly on these three cornerstones of classical science. If intelligent life exists elsewhere in the universe, it is probably the natural evolutionary outcome of physical forces as we understand them here on Earth (naturalism). If life exists elsewhere in the universe, its course of evolution may be determined by forces similar to those that have shaped our own evolution (determinism). Our own biological and technological evolution has led us to the point that we are able to use electromagnetic energy to send signals over vast cosmic distances. Other intelligent beings might do the same. Such signals, if they exist, can be detected and perhaps interpreted (empiricism).

The naturalistic, deterministic, and empirical perspective of the SETI enterprise is tempered by the classic caution of William of Ockham, who in the fourteenth century insisted that "entities must not needlessly be multiplied"—the famous scientific dictum of Occam's Razor. This is interpreted in modern science as saying that if two theories have equal explanatory power, the one based on the fewer assumptions is given preference. In reference to SETI, this

means that we need not assume that any unusual or exotic conditions (at least no more unusual or exotic than exist here on Earth) are necessary for the formation and evolution of life. Likewise, it also means that in the process of examining interstellar radio emissions, those of an interesting but nonrepetitive nature are chalked up as not being indicators of other intelligence. Occam's Razor surgically removes the joys of single strange signals from the tedious work of radio astronomers.

It is precisely because the SETI enterprise is on the edge of established science that its practitioners have been extremely careful to play within the rules of accepted scientific assumptions and procedures. Quasi-mystical speculation is the luxury of well-established and securely funded sciences. SETI enjoys neither distinction.

The assumptions on which SETI rests can be, and have been, debated *ad nauseam;* but, as the director of the Planetary Society's SETI Project, META I (Megachannel Extraterrestrial Assay #1), Paul Horowitz has said: ". . . You can argue yourself blue in the face, but if you want to answer this question you are going to have to do the experiment" (SETI Institute 1990).

With the dawn of the NASA program, this exotic cosmic experiment is now beginning on a massive scale. It is being conducted well within the prudent practices that have thus far successfully guided the human scientific adventure.

Get the Safe Science Message Out

If safe sex is to be effective, people must know what it means. If SETI's safe science is to work, the public must learn to apply its rules to their own thinking. Public information policy is critical for SETI.

Even in the remote possibility that with our present generation of radio receivers we are able to detect the noise of knowing beings, we should be prepared for the possibility of success and the possibility of human error. Of great concern to the SETI community is the possible erroneous announcement of a discovery of an extraterrestrial civilization that turns out to be either a natural cosmic phenomenon, a hoax by pranksters, or a hitherto unknown source of radio frequency interference (RFI).

In just over 30 years of small-scale radio searches, radio astronomers have thus far avoided the embarrassing spectacle of announcing nonexistent aliens. There were times when it was sorely tempting to scream, "We Found Them!" Frank Drake's first search in 1960 produced obviously intelligent emissions, which at first seemed to be from the star Epsilon Eridani. After repeated checks over several weeks, it turned out to be earthly radio interference. In 1965, Soviet astronomers discovered the pulsating signals of CTA-102. Tass, the official Soviet news agency, in an attempt to claim another first for Soviet science, claimed them to be signals from distant civilizations. The Soviet astronomers, however, took the courageous step of rebuking Tass for this interpretation. In 1967, the clear identification of rapid and precisely timed high-energy signals by Jocelyn Bell and Anthony Hewish at the Mullard Radio Astronomy Observatory, Cambridge, seemed, at first, to be of intelligent origin. After careful investigation and several months delay, they turned out to be pulsars—one of nature's most unusual physical objects. All of these incidents indicate that the astronomical community has a long track record of responsible behavior in such matters. The question is: Will this responsible behavior

continue under modern and more complex circumstances?

The growth of the tabloid media, an increasing tendency to conduct science by press conference rather than by peer review, and the growing competition for funds and recognition among scientists could threaten a cautious and deliberate researching of a potential discovery. The SETI community definitely wants to avoid what has been called the "cold-fusion confusion." That famous debacle within the fusion-energy community damaged the reputation of individuals, institutions, and to some degree science itself.

Recognizing the potential problems with announcing a discovery of extraterrestrial intelligence, several members of the SETI community, myself included, have struggled to find solutions. A post-detection protocol has been drafted ("Declaration of Principles . . ." 1990). This effort has been spearheaded by Michael A. G. Michaud, of the U.S. Department of State, and Jill Tarter. That protocol has now been adopted by the major scientific organizations involved in the SETI enterprise. The post-detection protocol is an effort to steady the SETI community's step in case it does come up with some very interesting signals. It is a complicated—some say "Byzantine"—procedure of checks, double checks, and notifications to be carried out before announcement is made. The protocol is voluntary, as it must be, and in practice it may be difficult to carry out. The protocol agreement, however, does stand as an official recognition of the responsibility of science to the integrity of its own enterprise and to the orderly notification of officials and the public that a discovery of potentially enormous consequence has been made.

A more difficult task is to try to envision what might happen after a well-verified announcement of signal acquisition. "Acquisition Day," as Philip Morrison likes to call it, would be one of the most significant days in human history. The SETI community would be announcing one of the great discoveries of science, perhaps *the* greatest discovery in scientific history. This would be a discovery that lies close to established cultural mythologies, sensitivities, hopes, and fears. It is not likely that announcement of a discovery would come with clear and complete answers as to the origin and meaning (if any) of the message. It is precisely this vacuum of information that public reaction would seek to fill. In the absence of complete scientific information, rumor, speculation, and exploitation would very likely occur. How should the SETI community respond?

The unknowns of the post-contact period could be a public information nightmare for SETI scientists. The SETI community is only beginning to think through these issues (Tarter 1992). A great deal of planning must be done, even if such planning is for an event that is only remotely probable.

In the meantime, the public should be informed of the difficulties in identifying and interpretating an alien signal. They should realize that mistakes could be made. If a discovery is made, the public should understand the deep commitment that scientists in the SETI community have shown to careful and open science. One should exercise extreme caution about accepting conspiracy theories that claim the government or scientific community is hiding something. One should expect and tolerate a great deal of confusion, rumor, and nonsense. Indeed, the public should, for its own mental hygiene, remember the message of safe science. If you can't abstain from your interest in aliens,

be careful about joining risky groups, avoid high-risk thinking, and ask for more information.

Note

This paper derives from lectures given at the 1992 Summer Session of the International Space University, Kitakyushu, Japan. I would like to thank my colleague John Elder for suggesting the title.

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Editor's Note

Earlier discussions of SETI issues have appeared in the following SKEPTICAL INQUIRER articles: Carl Sagan, "The Burden of Skepticism," Fall 1987; Thomas R. McDonough, "Searching for Extraterrestrial Intelligence" (interview), Spring 1991; Zen Faulkes, "Getting Smart About Getting Smarts," Spring 1991.

Education for Science

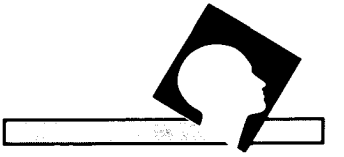
AL GORE, JR.

When I was in grade school, one of my classmates noticed that the west coast of Africa and the east coast of South America would fit together like pieces of a puzzle. "Teacher," he asked, "were those continents ever next to each other?" "Of course not," answered our teacher, "that's ridiculous!" Feeling foolish, the boy went back to memorizing the names of countries and their capitals.

Not too many years later the theories of plate tectonics and continental drift were developed, after scientists had puzzled for years over the apparent "fit" of continental outlines. My classmate's hunch was a good one. By now, many of the names of countries and capitals that we memorized have changed, as the factual information that's transmitted in classrooms often does, but what remains for a lifetime are the attitudes toward learning that are conveyed. What kinds of attitudes are we conveying to our children?

Every child is born eager to learn. The kinds of inquiries that have intrigued scientists throughout history are the daily thoughts of childhood. "How many stars are there?" "How does that seed make a flower?" "Why do I grow?" Parents and teachers have always been challenged by questions like these. They have tried to provide answers that would satisfy a young mind, and if they are really engaged in teaching *how* to learn, they have encouraged more questions and helped children learn how to find the answers.

Today, America's leadership in a global economy depends on the extent to which we can generate the right questions and nurture the process by which they are answered. Every young child, every student throughout our educational system, and every adult in the work force must be able to acquire the skills and



Leadership in the global economy requires quality education. Education for science should be a mind-stretching voyage of discovery. Children must be given the chance to use and strengthen every creative and inquiring instinct they have.

knowledge they need to compete, and to explore and lead the way to a new century of achievement.

Education for science should be a mind-stretching voyage of discovery for all of us. It is as fundamental as our understanding of ourselves, of our surroundings, and of life itself. All of the mysteries, all of the frontiers, all of the great adventures that lie before us will be more accessible to us with a greater knowledge of scientific disciplines.

The need for a sophisticated level of scientific skill and the methods to achieve that skill is far greater and profoundly different today than in the past. Agrarian and industrial societies felt the need for relatively few people who were technologically sophisticated and able to devote themselves to breakthroughs like the combine or the cotton gin that enabled the economy to remain competitive and efficient. Those who had little formal education or few verbal and mathematical skills could still achieve the American dream with hard work and a willingness to learn.

Now the harvest is information and technology, and scientific education has become the critical skill. Today an economy dependent on information and technology cannot survive without workers at every level who can not only use computers but program and design the tools with which they will perform their tasks. Increasingly, we are turning our production processes to highly specialized "short runs." This enables smart manufacturers to respond to very specific market niches and shortens product life cycles.

Today's workers know that they may change jobs frequently, even if they do not change employers, because the industries in which they work are changing and developing so rapidly. We can no longer afford to think that only a few students are going to be "good at math and science," and we cannot possibly predict all of the applications they may need to understand. We *can* predict with certainty that we will all need to be conversant with the technologies of the future. As workers or homeowners we may need to know everything from how to program a VCR to how to assemble a super-collider.

Students who were being prepared to be good industrial workers were taught by teachers who lectured *to* them. When they were tested, they needed only to remember and repeat the teachers' words. Instead of utilizing a child's natural curiosity and creativity, we sought to mass produce the workers who, in turn, would mass produce our products. Worse, we allowed millions of students to accomplish far less than they were capable of, and we never counted the cost.

We could seat children in rows and talk *at* them when we were going to expect them to stand in rows in factories and mills. If they are to be prepared to be the workers and thinkers of the twenty-first century, they must be experiencing the world directly, guided by teachers who act like coaches in helping them to formulate and answer difficult questions. Now we know we must give our children the opportunity to use and strengthen every creative and inquiring instinct they possess. We know that they must learn to work cooperatively, to write intelligently, to speak persuasively, and to acquire a fundamental level of competence in math and science. . . .

The number of college-age people in this country reached an all-time high in 1983 but will continue to decline through most of the 1990s. By the year 2000 the level is expected to be below the 1970 level. Today, the

college drop-out rate is twice the high-school drop-out rate. Moreover, fewer college students are seeking careers in science and related fields. A survey conducted by the American Council on Education and the cooperative Institutional Research Program at UCLA found that in 1988 only 15.3 percent of entering freshmen chose science majors, compared with 21.3 percent in 1966.

We urgently need to expand and diversify our science and engineering labor pool, but it is estimated that only 15 percent of the entering work force in the year 2000 will be native-born white males or Asian Americans, who have traditionally been over-represented in science, math, and engineering. African-American student enrollment in science and engineering has declined almost 20 percent since 1981. The rate at which black and Hispanic students continue their science programs through graduation has been 29 percent, compared with the national average of 79 percent.

Women comprise nearly half the nation's work force, and the Small Business Administration estimates that by the year 2000 women will own half of the nation's companies. Yet only 16 percent of all scientists and engineers are women. Overcoming the stereotypes that have prevented us from encouraging scientific education for women and minorities is not only an issue of equity, it is now an issue of economic growth and survival. During the Reagan/Bush/Quayle years this talent shortfall has been completely ignored at the federal level, and the NSF has had to create an internal "gender equity" task force to address the problem. . . .

In order to attract and retain more students into science and technology, and convince *all* our students that they need to be scientifically literate, we must use every opportunity to reawaken in our students a sense of wonder and begin to satisfy their natural scientific curiosity. It has been said that "science is a contact sport," and any teacher can tell you that the favorite activities of young children are those that allow them to roll up their sleeves and get elbow deep in their studies. We give outdated books to children sitting in quiet rows, rather than allowing them to plunge their hands into the mysteries of growing plants or crystals. And then, as our students become more sophisticated in their abilities, we increasingly divorce "science" from real life and experience and from the other disciplines they are studying. The joy of learning and the wonder of scientific discovery are frequently lost in attempts to "sort out" those who are "not really serious" about science. We do not have a single child to waste; not one future parent or teacher or scientist; not one productive citizen of the United States.

We must use every opportunity to reawaken in our students a sense of wonder and begin to satisfy their natural scientific curiosity.

Equally important are opportunities for students to visit and, when possible, participate in some of the professional settings where scientific skills are utilized. Educators know that the students who are able to find after-school or summer jobs that put their scientific skills to practical use are much more likely to pursue careers in the field. Even college students frequently have no clear conception of ways in which they can practice the science they are studying. The image

It is time to strengthen democracy by assuring that all our citizens will be scientifically literate and eager to make wise use of technologies as they emerge.

of "science nerds" must be supplanted by the image of explorers at the edge of our known world. As our knowledge and the uses we create for it expand exponentially, we must inspire young men and women with concrete visions of the future. . . .

Two outstandingly creative junior-high-school teachers in Nashville have devised a vocational education curriculum that introduces students to applied technology in robotics, lasers, pneumatics, computer-controlled machine lathes, and applied physics. During summer vacation, these teachers built a series of modular learning centers in a former woodworking classroom. Using a self-taught series of lesson plans, each student in their class is able to progress to the completion of a task, such as building a rocket. Science education takes on a new meaning when junior-high vocational education students become self-taught rocket scientists!

Understanding and utilizing technology is critical to the future of education, especially education for science. I have worked for nearly 12 years to secure legislation that would improve access to technology by teachers, scientists, students, businessmen, doctors, and librarians. The High Performance Computing Act that I introduced and fought for until it passed will create the nation's first high-speed computer network—a superhighway for information—and the new technology that will help us harness ever more effectively the capacity of our most powerful supercomputers. This information superhighway will link them with schools, research centers, and universities. Legislation I introduced in 1992 will help us rapidly move the technologies we develop to help improve our schools, make our businesses more profitable, and our health care more effective. Bill Clinton and I have proposed a national information infrastructure as a high priority for the 1990s. . . .

Students who do not even have access to tape recorders and slide projectors, and who are forced to use outdated texts, will never be able to compete in a world in which their fellow workers were taught with videodiscs and CD-ROMS in multimedia, interactive programs. Our school systems have invested a mere $5 per student per year in technology over the past decade. Many school systems are struggling with drastically reduced budgets at the local level, and states are faced with a cut-back of federal support; but whatever the school budget, the purchase of useless or uninspired material is money wasted, and even the smallest investment in materials that fire a child's imagination is money well spent. A small investment in technology will build a path to the superhighway of the future and feed a school's need to become part of a larger system of education. . . .

We are ideally positioned to maintain leadership in science and math. Americans win more Nobel prizes and produce more scientific publications than any other country in the world. Students from around the world seek advanced degrees at American universities. It is not enough to set a National Education Goal that states, "Our

students are to be first in the world in math and science by the 21st century." Active leadership that encourages the participation of parents, teachers, and entire communities is needed to accomplish this goal. We must prepare our children to take advantage of the enormous opportunity that our country provides.

In classrooms across the country, American children are asking questions that may have just as much scientific importance as the question my classmate asked about the continents that fit together. We can't afford to let those questions go unanswered. We can't allow that student's curiosity to be stifled. We can't wait until a student in another country finds the answer and creates a scientific revolution. With the available and expanding technology, with the wealth of ideas and approaches that are being developed, with the combined resources of business, applied research, and higher education, we can form a cooperative system that will continue to produce the world's leading scientists and enable them to put their knowledge into practice. We will also be able to educate the most scientifically knowledgeable citizens and the most technically proficient workers in the world.

The continents that we now know have drifted apart geologically over the millennia are being brought together by the fact that schoolchildren in small towns in Tennessee are using satellite beams to learn Japanese and advanced science so that they can compete successfully in a global economy. Revolutionary information and technology lie waiting to transform our educational system. They are already growing and reaching out to our children. For too long we have relegated scientific learning to an elite few; it is time to strengthen democracy by assuring that all our citizens will be scientifically literate and eager to make wise use of technologies as they emerge. National leadership is needed to assess, coordinate, and promote our enormous existing resources, both human and scientific. The Clinton/Gore administration will seek to create a vast network utilizing these talents and technologies that will continue to propel our children and our nation into a position of world leadership in the future.

Al Gore, Jr., is Vice President of the United States. Prior to his election, he was a U.S. senator and Chairman of the Senate Subcommittee on Science, Technology, and Space. This article is excerpted from an address he gave at the University of New Mexico, Albuquerque, October 28, 1992.

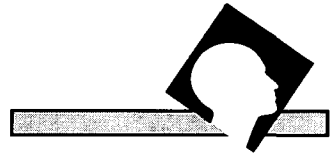
Evry Schatzman was the recipient of the Distinguished Skeptic Award at the 1992 CSICOP Conference in Dallas and was a speaker at the Saturday luncheon. This article is based on those remarks.

A Threat to Science

EVRY SCHATZMAN

We are living in a critical epoch. Everything is changing on a time scale shorter than the interval between two generations. The state of the world 30 years from now is so uncertain that it is impossible to make any predictions. In this situation, what is the possible role of science? I am raising this question here because I think CSICOP can play an important part in the necessary actions.

I am perhaps pessimistic, but I think there is a threat to science throughout the world. This appears to be in contradiction to the results given by the current *Science Indicators*, a report of the National Science Board (NSB), briefly analyzed in the Fall 1992 SKEPTICAL INQUIRER. I shall try to explain why I nevertheless stick to the idea that there is a threat to science.



The spreading public misunderstanding and mistrust of science is dangerous in these rapidly changing times.

First, what do we call science? A line in the NSB report, "Eighty percent agree with the proposition that even if it brings no immediate benefits, basic science research should be supported by the federal government," brings us to the main point. Science can be opposed to technology. Science discovers laws of nature, and technology uses this knowledge to build tools, instruments, and machines. In laboratories, a new tool can help to discover a new law of nature, but the tool itself does not depend on unknown properties. Surprisingly, the confusion between science and technology is found in the writings of many philosophers, in their thinking that basic scientific research and technology are not different. Basic scientific research explores the unknown. A discovery is unknown before being made. Technology is based on the use of known properties of matter. The first statement among several used by the

NSB to elicit public attitudes toward science was: "Science and technology are making lives healthier, easier, and more comfortable." Eighty-two percent of American and 74 percent of French adults agreed with the statement. If we consider the present ecological movement, which often suggests that science is at the origin of pollution and fosters the belief that the atom bomb is an emblem of science, the data published by the NSB are surprising. Was there a bias to the questions?

There are a variety of attitudes toward science: Some people admire science because it brings truth. Some people do not trust science because what they get from quantum mechanics is that it does not bring truth. But the aura of science is such that lots of people are convinced that there are scientific proofs that astrology and other such pseudosciences are right, and many of them complain that these matters are not taught at the universities and are not studied in research centers.

Let us leave now the general public and go to the political level. Politicians are interested in the applications of science when there is a possibility that they will lead to new industrial developments, increased production, and improved economic growth. The problem is that scientists cannot promise anything; it is not possible to predict the benefit of discoveries that have yet to be made. Consequently, politicians have a tendency to cut the budget of scientific research in fields that have not produced any benefit and do not show promise of benefit on the horizon. In this respect, the very small number of political representatives who come from the scientific community are very important; but most politicians have no knowledge of the nature of science and scientific research, and this is the point I would like to stress now.

Most politicians, being ignorant in science, rely on two kinds of information: on one side, the history of the applications of science from World War I to World War II, and on the other side, the dissertations of thinkers and philosophers. On the first side, we have an example.

Reason Against Dogmatism

At the Union Rationaliste, we advocate the use of reason against dogmatism and of science against pseudoscience, and defend humanism against the continuous attempts of the Catholic church to control education, morals, and, if it were possible, the state. This last question has been a major part of our activities during the past several years, which does not mean that we forgot about astrology, homeopathy, and other pseudosciences. We took part in the action against the strange affair of "water memory," invented by Jacques Benveniste to justify homeopathy. The trouble with that story is that some scientists, in a discrete and anonymous way, helped Benveniste, whose laboratory was supported by homeopathic drug firms. *Science et Vie*, a well-known and excellent magazine of the popularization of science, was condemned for defamation, and during the preliminary investigation Benveniste received help from people with political power. Altogether this raises important and deep sociological questions.

—*Evry Schatzman*

Twenty years ago, *Physics Today*, the monthly magazine of the American Physics Society, mentioned that the new generation of politicians, having no experience of the incredible applications of scientific discoveries during World War II, were not as convinced of the value of basic scientific research as their seniors had been. This was the explanation of the sudden drop in the amount of state support for science. On the other side, the situation is perhaps worse in Europe than in the United States. Constant reference to quantum mechanics and to Heisenberg's uncertainty principle gives to a large well-educated but not scientific public the idea that it is not possible to have confidence in science, to trust science. The consequence is quite clear: Why should the state invest in a domain that cannot be trusted?

This brings us to the question of how to teach science in order to make clear that science is part of culture. But we have to consider the difference between teaching science as a tool, eventually as a professional tool, and teaching the nature of science.

Scientific discourse gives a representation of natural processes; the major property of this knowledge is that it is operational. We here meet a philosophical problem. Theory is a representation of reality. Theory can be incomplete, but it can predict new phenomena, one of the best examples being the experimental discovery of the wave properties of electrons after the discoveries of Louis de Broglie. In this respect, the French school of physics in the first half of the century was much influenced by positivism. Experimental data were the only reliable things; theory was always considered as speculative. I am a theoretician, and I had to fight hard in my younger years to have theory accepted by the French scientific community.

These statements about theory apply particularly to Prosper Blondlot, who "discovered" N-rays. I think he was essentially a poor physicist, reflecting the state of French physics early in this century, probably completely ignoring Maxwell's electromagnetic theory of light and not deliberately committing fraud. The discovery of the weakness of his N-ray experiments took place early enough for the French Academy of Sciences to deliver its award to Blondlot for all his work rather than for his discovery of N-rays.

I think we cannot stress sufficiently the wonder of realizing that an experiment based on a law of nature can be successful. This can be done at an elementary level and shown to pupils by nice experiments they can conduct themselves. The enthusiasm generated by discovering that a scientific statement corresponds to an observable phenomenon seems to me part of culture.

It is important to note that, if teachers themselves are not convinced that a scientific statement expresses a real property, they will not be able to carry the message to their pupils. When I am speaking about the threat to science, I am also thinking of a slow disaggregation of the message to pupils, with the possibility that in a few years people will consider scientific work to be like an activity of entities on another planet, of beings foreign to Earth.

What worries me is the potential decay of science in an epoch where the time scale of all events is decreasing and becoming shorter than the time interval between two generations, 20 or 30 years. Let us assume that no World War III will occur. The world population will have increased by 50 to 100 percent. Migration will have become a great worry. Energy

problems will have to be solved on a planetary scale. Specialists claim that Earth could easily feed 50 billion people, but producing food is not only a technical problem: food production, for social reasons, is already difficult in many countries and can become worse. I always have the feeling that politicians are talking of tomorrow's problems with nineteenth-century thoughts and language, as if we had eternity ahead of us.

We are not going to build an ideology, the new version of the future, the new utopia that will help us to cross the turn of the century. But at least we should approach these problems. People have strange beliefs, yes. But there is a lack of security, an uncertainty of social life, an absence of hope, a need for a vision of a happy future, a weakness of people's personalities that appears to be compensated for by beliefs that give the feeling of safeness. These sociological and psychological problems have to be understood if we want to fight efficiently against unsupported beliefs. Approaching these questions also belongs among the duties of CSICOP. This is part of our task; it will help the defense of science, and I am sure that we can do it.

Evry Schatzman is president of the French Union Rationaliste, *founded by the great physicist Paul Langevin in 1931. Schatzman is a member of the French Academy of Sciences and has been teaching astrophysics at Paris University.*

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Charles Honorton's Legacy to Parapsychology

SUSAN BLACKMORE

Charles Honorton was one of parapsychology's foremost researchers. He died November 4, 1992, of a heart attack at his home in Edinburgh, leaving the small world of parapsychology in shock. Although many of us knew that he had had heart problems for some time, the loss of an active researcher in the midst of his career and at the age of only 46 must always be a shock. To parapsychology it was doubly so because of the unique importance of his work.

I wanted to write something in his memory, not only because I knew him for many years but because his loss will have an enormous impact on parapsychology. And I am not at all sure just what that impact will be.

Chuck and I had not, to say the least, seen eye to eye on the paranormal. I remember with affection a somewhat drunken argument at a parapsychology convention at Tufts University in which we were both more or less reduced to tears and hopeless hugs by our complete failure to understand how the other could go on believing what they did. At that time, in 1985, he was director of the Psychophysical Research Laboratories, in Princeton, New Jersey. In 1989 the funding dried up (as has happened to so many parapsychology laboratories), and he moved to Edinburgh University to work with Bob Morris and his team at the Koestler Chair. After his arrival there, he and I had many extended phone conversations and learned that, whatever our differences, we shared a determination to try to understand paranormal claims and an unwillingness to accept shoddy research or shoddy criticism. An Italian skeptics' journal recently asked three well-known parapsychol-

In 1990 Honorton published the results of 11 well-designed ganzfeld experiments yielding strongly significant results. Unlike so many earlier studies in parapsychology, these cannot be easily dismissed.

ogists and three leading skeptics to write about parapsychology's future. Chuck and I were asked to comment on the contributions from opposing points of view. Although I have not yet seen his response, I have a sneaking feeling that his and mine will have more in common than in opposition.

But that is enough of my personal memories of Chuck; more important is to explain why his death will make such a difference.

It is often said that in parapsychology fads come every decade or so and then go away: like S. G. Soal's work in the fifties and dream-telepathy in the sixties. The supposed fad of the 1970s was the ganzfeld. But it has not gone away yet.

It was in 1974 that Honorton and Harper published the first paper describing the psi-ganzfeld technique in which the subject, or receiver, relaxes on a comfortable chair or bed, has halved ping-pong balls over the eyes to produce a uniform visual field (the ganzfeld) and white noise or repetitive sounds fed through headphones. His hypothesis was that this reduction in patterned sensory input would encourage free-flowing imagery and the incorporation of extrasensory perception (ESP), and that it would be far easier to study than other "psi-conducive states," such as meditation and dreaming. The significant results encouraged many other parapsychologists to replicate or extend the method.

By 1982, when the Parapsychological Association teamed up with the Society for Psychical Research in a centenary conference, the "Ganzfeld Debate" was under way. Ray Hyman had taken on the task of evaluating the entire database of some 40 ganzfeld experiments. He argued that the claimed 55-percent success rate was a gross overestimate, that multiple testing pushed the true significance level way above the assumed .05, and that many studies suffered from procedural flaws. He subjected the data to meta-analysis and showed that some flaws positively correlated with effect size—in other words, the flaws were probably responsible for the effect and the data were too weak to support any claims about psi (Hyman 1985).

In response, Honorton (1985) used a statistical technique to eliminate the problem of multiple analysis. He showed that the successful results did not depend on any one investigator and performed his own meta-analysis, which showed no relationship between flaws and study outcome. The whole debate was published in 1985 and was a turning point in parapsychology. Although people remained divided over the substantive issue—Is there ESP in the ganzfeld or not?—there was general agreement that the debate was extremely useful and that both Hyman and Honorton were to be congratulated for their persistence and courage in working together and seeing it through to a joint statement (Hyman and Honorton 1986). Perhaps most important was that the debate brought together skeptics and parapsychologists to discuss the issues. I can recall several conferences at which they tried to agree on just what would count as a flawless experiment. Realizing, of course, that such an ideal is unattainable, it was still possible to reach some general agreement. It was then that Chuck designed a completely automated ganzfeld testing procedure.

Over the next few years Honorton and his team at Princeton worked with their system and in 1990 published the results of 11 experiments with 241 volunteer subjects and 355 ganzfeld sessions (Honorton et al. 1990). I can only imagine the amount of time and work involved in this from my own

experience with a simple ganzfeld experiment with just 20 trials. The results of these automated studies were staggeringly significant. My own impression from reading the paper many times was that the experiments were very well designed and the results certainly not due to chance. If they were due to something other than psi it was not obvious what it was. In other words, these experiments stood out from all the mass of failed, barely significant, or obviously flawed studies.

Why were they successful? That is the crux of the matter and one of the reasons Chuck Honorton will be so sorely missed. Everyone interested in parapsychology, whether believer, disbeliever, or skeptic, ought to take these results seriously. They cannot be dismissed lightly. They conform to most, if not all, of the requirements laid down by the skeptics, and the results were highly significant, convincing many of the reality of laboratory psi. Certainly the Edinburgh group took them seriously and were delighted that Chuck was able to come to Scotland to set up the same automated system in a different place and with different colleagues. They, like the rest of us, wanted to know whether the same results would be obtained.

Now, of course, we shall never know. The Edinburgh team is determined to carry on Chuck's good work, but what will they find? If they are as successful as his Princeton team was, then there will be something to work with, and we may yet get to the bottom of the mystery—whether the solution is a psychic or a normal one. But if they fail I suspect we shall never know why Chuck Honorton seemed to have the magic touch when it came to producing psi.

Was it his personality? Was it something he brought to the experimental design? Was his hypothesis about sensory noise reduction actually correct? I am very, very sorry that we are not to see Chuck himself repeat these experiments over here and give us the chance to find out. His death was a blow to parapsychology and he will be greatly missed.

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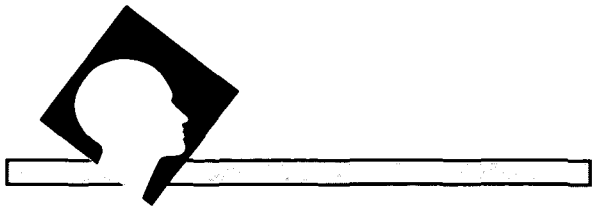
Book Reviews



Unsolving 'Solved' Mysteries

Unsolved Mysteries: Past and Present. By Colin Wilson and Damon Wilson. Contemporary Books, Chicago, 1992. 426 pp. Paper, $13.95.

ROBERT A. BAKER

Colin Wilson, one of the most prolific of the modern paranormalists (author of such books as *The Occult; Poltergeist!; The Psychic Detectives;* and *The Encyclopedia of Unsolved Mysteries*), has published yet another paean of psychic propaganda. *Unsolved Mysteries: Past and Present* is coauthored by his son Damon. Colin, nevertheless, not only professes to having many skeptical friends—Melvin Harris, Ian Wilson, and Marcello Truzzi—but also goes out of his way to praise CSICOP luminary Joe Nickell for his solution to the mystery of the Barbados "restless coffins." Wilson spoils it all, however, by immediately proceeding to "unsolve" the coffin mystery by overlooking essential elements of Nickell's explanation and, from his literary bench, ruling that both the coffins and "The Ghost of the Mackenzie House" are still "unsolved" mysteries. Any unbiased reader of these two cases, found in Nickell and Fischer's *Secrets of the Supernatural* (Prometheus, 1988), would definitely not agree. In Nickell's words,

> As ghostly occurrences go, however, Mrs. Edmund's visions are of a type that is all too common. Indeed, they match a phenomenon psychologists term hypnopompic hallucinations. Often described as "waking dreams," such visions are frequently of the ghost-at-the-bedside variety (p. 18).

Nickell and Fischer clearly establish beyond a shadow of a doubt that the ghostly noises in Mackenzie House came from the house next door and that this was the only material basis for the legend of the hauntings. Wilson simply doesn't accept Nickell's explanation of the coffins mystery and his evidence that the entire thing was a hoax, or the Mackenzie haunting explanation. In Wilson's words, "If you happen to believe, as I do, that there *are* such things as ghosts, then you would require a further demonstration that the sightings of a shadowy woman and a man in a frock coat were also the result of the rumbling boiler" (p. xix). Of course no such claim was ever made, but this fact does not get in the way of Wilson's contention.

In a similar manner, and using some of the strangest paralogical arguments ever made, the Wilsons manage to "unsolve" 33 additional historical enigmas and psychic or supernatural occurrences. In carrying out their feats of literary prestidigitation the Wilsons use so many circumlocutions and confabulations, as well as contrary and contrived

arguments, that they have managed to create a new genre of reasoning fully deserving of its own name: Wilsonlogic. In Wilsonlogic, for example, $2 + 2 = 4^2/_3$; if A = B and B = C, then A = Z; if all men are mammals, and man is a mammal, then all men are horses; and, finally, if five-headed hydra and mermaids were mentioned in ancient legends, then the legends are, obviously, true! The most egregious examples of Wilsonlogic are found in three chapters, "Was Philip Dick Possessed by an Angel?" "Fairies: Are the Little People Just a Fairy Tale?" and "The Mystery of Hypnosis: Real Life Svengalis and the Telepathy Theory."

In the case of Philip Dick it is crystal clear from his behavior and his symptoms that Dick was a mentally-ill individual, under treatment by psychiatrists and also poisoned by excessive alcohol and drugs. Yet, according to the Wilsons, Dick's hallucinations were nothing of the sort; they were, instead, evidence of "the spirit world." With regard to the fairies that Elsie Wright and Frances Griffiths confessed to having cut out of picture books and faked in photographs for Sir Arthur Conan Doyle, according to the Wilsons Elsie and Frances *really did see real fairies* by the stream in Cottingley despite their confession! And no matter what science and research say about hypnosis, not only are there real-life Svengalis who can make people do what they want—even kill—but it is also possible to hypnotize people telepathically. Also, while under hypnosis people can perform "miraculous" feats like keeping their rigid body suspended between two chairs! In this regard the Wilsons' naivete and lack of understanding of hypnotic phenomena are truly amazing. They also clearly prefer eighteenth- and nineteenth-century accounts of fallacious thinking about the phenomena to anything published in this century.

The Wilsons' philosophical stance is better understood once one reads the senior author's confession in their Introduction. Here he tells us that he started out as a scientist but soon found science

> horribly cold and one-sided. It was obvious that the world of literature and music was as exciting—and as intellectually valid—as the world of stars and atoms. Yet there was no question of rejecting science, only of trying to find some wider form of knowledge that could embrace both worlds.
>
> When, a quarter of a century later, I was commissioned to write a book on 'the occult' I approached it with the same skepticism I had felt at age fifteen. Within a week or two I had come to recognize that skepticism is merely a name for intellectual laziness. Precognition, telepathy, out-of-body experiences, "second sight" and poltergeist hauntings are all undoubtedly real. But how could they be fitted into a scientific framework? (pp. xiii-xiv).

Wilson's answer to his own question was simple: brain research! According to his misunderstanding of what he has read, brain research says that we have "two brains," a right one and a left one. The left one is "scientific" and the right one is "paranormal," i.e., sensitive to psychic vibrations and such. Wilson senior also sees himself as a "sensitive" and professes to have become a skilled dowser and one who is "sensitive to the local atmosphere." In reading further one encounters Wilsonlogic again in the authors' use of the old William James chestnut that in order to disprove that all crows are black you only have to produce one single white crow. Ergo: a bookful of cases of fraud or excessive gullibility

proves nothing except that those *particular* cases are fraudulent.

In similar fashion, the Wilsons then proceed to argue that despite every mystery that science and the scientific community has investigated and found to be due to fraud, human gullibility, misrepresentation, disinformation, misinformation, rumor, misinterpretation, excessive human credulity, exaggeration, superstition, and psychological fallibility, the effort in each and every case is faulty, inadequate, and unable to explain the original mystery. Thus, in the strange world of the Wilsons, King Arthur and Merlin were real people not legends; the dead do come back and avenge themselves on their murderers; crop circles and flying saucers are both genuine mysteries; Philip K. Dick's hallucinations "were not entirely subjective and unreal," i.e., he wasn't a paranoid schizophrenic but really was possessed by an angel and talked with God; the Dogon tribe really was visited by spacemen from the dog-star Sirius; Arthur Conan Doyle's Cottingley fairies were real and Frances Griffiths really did see fairies by the stream; Rudolph Hess had a double and the double died in Spandau prison; the Hope diamond, being a crystal, can absorb emotion and "curses" and it therefore really is cursed and haunted; hypnosis, despite hundreds of years of research, is still a mystery, and hypnosis via telepathy is not only possible but happens frequently, and real-life Svengalis do exist; band leader Glenn Miller did not die in an airplane over the English Channel but was killed in a brothel brawl in Paris; modern man uses only one-fifth of his total brain capacity; the dead most certainly *can* and *do* possess the living; sea monsters do exist; the famous "crystal skull" has ominous and magical powers; "vortices" or "energy whirlpools" can explain just about everything paranormal; and, finally, dead people in the form of zombies really do come back from the grave and walk among us, as do vampires. Not only are vampires real but they are, like poltergeists, "earthbound spirits" or "hungry ghosts" who draw energy and vitality from the living.

One could, cavalierly, dismiss all of this nonsense as nothing more than silly superstition, which we have always had with us and probably always will. But what is particularly unsettling in this instance is that too many uninformed readers picking up this book—readers who are unfamiliar with the carefully researched skeptical and scientific investigations that have clarified and solved these issues years ago—are likely to conclude that this admittedly well-written and pseudo-scholarly tome is not only authoritative but accurate. Unfortunately, despite its glossy and literate veneer, there is little difference between the arguments made in this book and those one finds in the *Weekly World News*, *The Globe*, and the *National Enquirer*.

Literary pretensions, inaccuracy, obfuscation, paralogic, misrepresentation, and deliberate mystification of the natural and normal are not in the best interests of human welfare. There are enough social, medical, and scientific mysteries all around us, mysteries desperately in need of research and solution, without wasting valuable time on spurious and specious ones—particularly superstitions, fallacies, and conundrums that human inquiry and ingenuity have confronted and solved years ago.

Robert A. Baker is emeritus professor of psychology at the University of Kentucky and author of They Call It Hypnosis *and* Hidden Memories: Voices and Visions from Within.

Evaluating Graphology

The Write Stuff: Evaluations of Graphology—The Study of Handwriting Analysis. Edited by Barry L. Beyerstein and Dale F. Beyerstein. Prometheus Books, Buffalo, N.Y., 1992. 490 pp. Paper, $21.95.

ELVER A. BARKER

Having made a 16-year intensive and near futile search for scientific research reports that validate the claims of graphologists, I eagerly awaited publication of *The Write Stuff.* According to the editors, all of the 12 critics of graphology who were invited to contribute to this book responded with essays, but only three of the several invited graphologists did so.

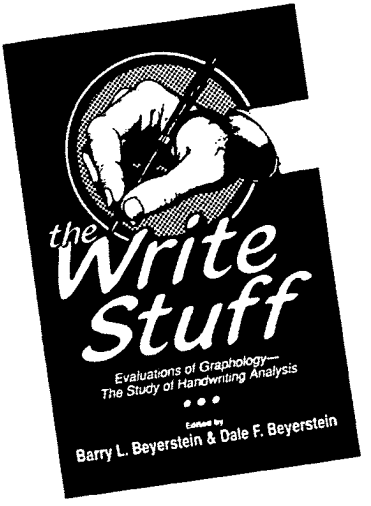
This is a symposium by both critics and practitioners of graphology. The editors are among the critics. Barry L. Beyerstein is professor of psychology at Simon Fraser University in Vancouver, British Columbia. Dale F. Beyerstein is professor of philosophy at Vancouver Community College.

There is a brief history of graphology. Joe Nickell, a questioned-document examiner, makes the important distinction between the true science of handwriting analysis to determine forgeries, and whether particular documents were written by the same person, and the pseudoscience of graphology, which claims to interpret character and personality traits, aptitudes, attitudes, interests, proclivities, and, in some branches, intelligence and mental and physical health. The two fields are commonly confused because practitioners of the latter often engage in the former.

The number-one question is: How did all of the many precise dogmas about correlations between handwriting signs and personal traits originate within the several conflicting branches of graphology? *The Write Stuff* is meant to be "an overview of the best evidence available on both sides of the dispute about graphology," but I searched the book in vain for summaries of studies of large numbers of subjects that show high correlations between handwriting signs and personal traits. (This claimed evidence by all of the irreconcilably different and competing branches of graphology is apparently rigidly kept secret from both their students and the public. People who are scientifically oriented have sound reason to believe that not enough of these scientific reports exist to warrant calling any branch of graphology a science. Did the founding practitioners of the conflicting graphology schools irrationally jump to conclusions by judging the whole by only some of its parts?)

Chapters by leading critics of graphology—specialists in personality, cognitive psychology, and psychological testing—assess graphologists' claims against the standards used in their fields.

Oskar Lockowandt, a professor of psychology at the University of Bielefeld, Germany, and one of Europe's most prominent graphologists, contributed two chapters. One is "The Present Status of the Research of Handwriting Psychology as a Diagnostic Method." He cites studies that have conflicting results and disagreements among researchers. His references to studies published in German


the Write Stuff
Evaluations of Graphology—
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Barry L. Beyerstein & Dale F. Beyerstein

suggest that they are validations of the sign/trait correlations, but he does not summarize those research reports. Lockowandt says: "Handwriting psychology has always objected to simple correlation studies on the grounds that it is impossible to predict any criterion from a single graphic characteristic. This objection is remedied by multiple correlation techniques . . . in which several graphic characteristics are combined in the prediction of criteria. . . . The results of validity studies correlating individual characteristics with criteria are predominantly negative, but validation studies using multiple correlation have yielded more positive results. . . . Contrast-group studies of specific writing characteristics have led to inconclusive or conflicting results. They have been more successful at validating interpretations of handwriting." But our total handwriting is made up of individual parts, and graphologists of all the branches *do* consistently use claimed individual sign/trait correlations.

James C. Crumbaugh, a clinical psychologist and a member of the International Graphoanalysis Society, contributed the chapter on "Graphoanalytic Cues." He also favors the holistic approach: "Sign interpretation, the attempt to tie specific personality traits to specific signs or features found in . . . handwriting has never been well validated for any projective technique. . . . Global interpretation has consistently been superior to sign interpretation. . . . Since the meaning of a sign changes depending on the other signs with which it occurs, a sign cannot be interpreted in a constant manner from one person to another." (This is getting as complicated as astrology.) Then in the same paper, he gives illustrated examples of how specific handwriting signs correlate with specific personal traits, but he offers no summaries of research reports that validate his claims.

Graphologists are being contradictory when they speak against what they call "a too simplistic approach" and in favor of "a holistic approach" in which the practitioners claim not to zero in on single handwriting signs but rather to analyze the handwriting patterns as a whole. This is an evasion of their responsibility to furnish evidence for the individual sign/trait correlations, which they have to use in order to analyze the whole.

Patricia Wellingham Jones, a practitioner of the Roman-Staempfli school of graphology, in her chapter on the evaluation of the handwriting of successful and unsuccessful women, writes: "The results of this study suggest that achievement or success can be inferred fairly easily from measures used in graphological analysis." One study is never enough from which to draw conclusions. Her study needs to be replicated many times with large groups of other subjects by many different researchers working independently of one another. If all of the researchers get the same results, then rational con-

clusions can be drawn.

It is admitted that most of the practitioners of all the branches of graphology get their training through correspondence courses from money-oriented graphology schools and classes. In my view, none of the research cited should give them the legal right to practice their claimed "science," for payment or not, when the results of their interpretations are used as a basis for discrimination in employment, personal relations, judging whether someone would be a credit risk, selection of juries, and other areas where honesty, justice, and scientifically determined facts should be the rules.

The included studies by psychologists on the many inaccuracies and occasional accuracies of graphologists are important because they cause any thinking person to be distrustful of graphology, but they are of secondary value. Of first importance, there must be studies that get to the *roots* of this popular dogma, which is posed as a science but has thus far not been proved to be a science at all. Researchers need to study large numbers of subjects to determine whether the claimed correlations between handwriting signs and personal traits are valid. Lockowandt is right that the claims of graphology need to be researched in universities. But graphology should not be taught in educational institutions as a legitimate science for interpreting personal traits until and if it is proved to be that. These studies need to be made of the vast number of detailed claims of all of the conflicting branches of graphology.

Specifically, in the Graphoanalysis branch, it is claimed that a person who writes circle letters with initial and double loops within the letters is deceitful and dishonest. Handwriting specimens could be obtained from a hundred prison inmates who are serving time for burglary, robbery, or extortion. Handwriting specimens could also be obtained from an equal number of persons known for their integrity. The coordinator of the study, who should not be a graphologist of any brand, would analyze the 200 samples to determine if the Graphoanalysis claim is correct. Additionally, all 200 specimens could be photocopied and analyzed by at least 12 certified Graphoanalysts, working independently of one another, who would be told that the test was to distinguish which of the specimens indicated dishonesty and deceitfulness and which did not.

Until such studies are made by many researchers independently and the findings support the claims of one or more of the branches of graphology (all of the conflicting claims of the many branches cannot be valid), the use of graphology for interpreting personal traits is extremely dubious and unwise.

The burden of proof should be on those who make the claims. If they refuse to provide proof, nongraphologists need to play a role. Even so, the self-proclaimed experts of each school of graphology should not only be willing but eager to volunteer in this kind of research. If they are certain their claims are valid and if they have a social conscience, they will come forth as volunteers to the psychology departments of universities and other research institutions, and to private researchers, and ask to be tested.

Because there are some people with Ph.D.s who believe in graphology does not make it true. There were some Ph.D.s and M.D.s in the previous century who were converts to the pseudoscience of phrenology.

The contributions of two attorneys, John D. Raugh and Robert S.

Carswell, each address the practice of graphology in light ot relevant statutes and precedents in the United States and Canada. With recent legal restrictions on the use of polygraphs and psychological stress evaluators, graphologists have rushed in to fill the void. They appeal to some personnel executives and to some attorneys, court judges, and police, and they reap a financial harvest from their legalized practice.

The value of this text is that it brings out the glaring lack of research data necessary to prove the claimed correlations between handwriting signs, whether individually or collectively interpreted, and personal traits. The book has a major flaw: Much of it is written in such highfalutin language that it is beyond the understanding not only of the average reader but of many of the people who need it most.

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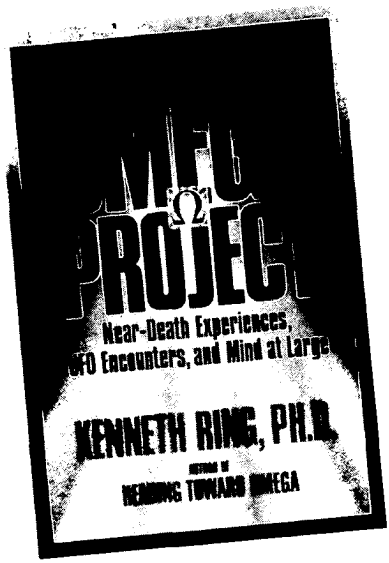
Have UFO-Abductions and Near-Death Experiences a Common Origin?

The Omega Project: Near Death Experiences, UFO Encounters, and Mind at Large. By Kenneth Ring. Wm. Morrow, New York, 1992. 320 pp. Hardcover, $20.00.

GORDON STEIN

We have lately been bombarded with books about UFO encounters and abductions. Before that, there were a number of books about near-death experiences (NDEs). Now, Kenneth Ring, a psychology professor who has been interested in NDEs, has tried to tie the two phenomena together. Ring feels that the personalities of people who have NDEs and of those who claim UFO encounters are similar. He feels that both phenomena can be explained as due to the same type of *internal* process in the mind of the affected person.

This position, although attractive on the surface, really does not agree with some important factors. Most important is that the *circumstances* of the NDE and those of the UFO experience are entirely different. The NDE occurs when there are witnesses to the physical body of the experiencer, for example, in an operating room. Even if the person having the NDE feels that he or she has traveled "out of the body," the body in question is still being observed by others. In contrast, UFO encounters almost always occur when there are no witnesses who are *not* having the same experience. People having NDEs often claim to have seen relatives, friends, and religious figures. This has not been reported to have occurred in a UFO case. NDE experiences occur while the person is involved in a



traumatic life-and-death situation. Such is almost *never* the case in UFO encounters. There is no corroborating physical evidence for an NDE, while abductees sometimes report physical marks, bruises, and scars as a claimed result of their abduction experience. It therefore appears that the circumstances of the two phenomena are quite different. That removes an essential prop for Ring's argument. Although Ring's hypothesis is not demolished by this, it is considerably weakened. The burden of proof is upon him to buttress his position by supplying us with enough similarities between the two phenomena that we can minimalize the importance of the difference.

Does Ring deliver? Although he admits that UFO experiences *"are real in their effects,"* [emphasis in the original], that of course does not mean that these people really *have* been abducted by aliens. It merely means that they really *believe* that they have been. The similarity Ring claims between NDEs and UFO is found in the *"archetypal structure"* of the experiences. I begin to see red flags waving just about now. Ring includes a table in which he lists 14 characteristics of NDEs and "close encounters of the fourth kind" (meetings with aliens). The two experiences couldn't be more different, Ring notes; yet he concludes that *because* of the polar differences, the experiences are cut from the same cloth.

The secret lies in the personality characteristics that both types of experiencers have. That similarity is *fantasy-proneness.* Ring defines this as "the spontaneous tendency to enter into a state or rapt absorption focused on a world of self-created fantasy." The last half of the present book is an account of "The Omega Project," in which Ring studied the fantasy-proneness of NDE and UFO experiencers. He gave long sets of questionnaires to members of both groups and concluded that they showed a common pattern of childhood abuse and greater temporal-lobe sensitivity. According to Ring, the latter makes them more susceptible to the influence of electromagnetic effects that may come from inside the earth's crust. Again, I begin to see those red flags waving.

Ring concludes with a Jungian analysis of the possible sources of NDEs and UFO experiences, both of which he traces to mental processes that are responding to some deep human need. While it is tempting to classify both phenomena as mere mental processes, whether you can accept Ring's explanation depends upon whether you can accept Jung's work in general. I have difficulty with it. Nevertheless, Ring's work is certainly provocative and should be of interest to all who are struggling to understand both the NDE and the abduction experience.

Dr. Stein is a physiologist and a CSICOP Consultant.

Freudian Thought, Not Freudian Fraud

Freudian Fraud: The Malignant Effect of Freud's Theory on American Thought and Culture. By E. Fuller Torrey. HarperCollins, New York, 1992. 362 pp. Hardcover, $25.00.

TERENCE HINES

In graduate school I was once assigned a particular textbook. I dutifully purchased it and began reading. The more I read the more puzzled I became. While the material I was reading had some general resemblance to the supposed topic of the book, it was certainly not what I'd expected. The puzzle was solved when I looked at the title page and discovered that the wrong set of pages had been bound into the cover of the book.

In reading *Freudian Fraud,* by E. Fuller Torrey, I frequently got the same puzzled feeling I'd had that time in graduate school. The title led me to expect a rather scathing treatment of Freudian theory. Although there is some such discussion late in the book, it is certainly not the main focus. Rather, Torrey's book provides a sort of intellectual history of Freudian thought in American culture. But several chapters don't even concern themselves with this topic. Chapter 2, "Race, Immigration, and the Nature-Nurture Debate," covers the development of American views on these subjects in the late nineteenth and early twentieth centuries. These topics are really very little related to Freudian theory! Only on the last page of the chapter does Torrey tie them to Freud, by stating that Franz Boas, an active participant in the debates on these topics, was "linked to Freud's theory" (p. 59). The link is weak and it's difficult to see why so much space (20 pages) was spent on issues so little related to the supposed subject of the book.

Likewise, Chapter 3, "Sexual Politics of Ruth Benedict and Margaret Mead," covers a great deal of ground that has almost no direct relevance to the issue of Freudian thought in America. True, both Benedict and Mead, who studied with Boas, were favorable to Freud's theories, but the chapter hardly mentions Freud or his theories, or even the influence of Freud on Benedict and Mead. Rather, the chapter describes at length the "research" both these women carried out, their views on the nature-nurture issue, and their sexual orientations. These are certainly interesting, and I was surprised to learn just how shoddy Mead's so-called research really had been, but they are largely out of place in a book titled as Torrey's is.

Chapter 4, "Hitler's Resolution of the Nature-Nurture Debate," goes over the well-known development of the Nazi horror and makes the point that many psychoanalytically oriented professionals fled Germany because of Hitler and that this greatly increased the knowledge and influence of psychoanalysis in the United States. It seems excessive to spend 20 pages to make this simple point.

The next four chapters come closest to providing an intellectual history of Freudian thought in the United States. They cover Freudian influences in such areas as child rearing, criminology, literature, politics, men-

tal health, films, publishing, and so on. These chapters are well done and informative, although they are much more descriptive than one would be led to expect by the phrase "malignant effect" in the book's subtitle.

It is not until Chapter 9, "Scientific Basis of Freudian Theory," that Torrey provides a critical evaluation of the validity, or lack thereof, of Freud's ideas and the therapy that is based on these ideas. He covers the standard criticisms against Freudian theory that have been made for years and provides a good summary. It was this sort of material that I expected would make up the bulk of the book, not just 26 pages—7 percent of the book! The reader interested in a true book-length treatment of this topic should see Hans Eysenck's 1985 *Decline and Fall of the Freudian Empire,* published in Britain in 1985 and released in the United States in 1990 by Scott-Townsend Publishers.

One comment must be made about Torrey's bibliographic notes. They are simply awful. It is almost impossible to find the source of a quote or a factual statement made in the main text of the book. In fact, I cannot imagine a more useless method of providing bibliographic information than the one Torrey (or perhaps his publisher) adopted.

In conclusion, *Freudian Fraud* was, overall, quite interesting, well written and informative, although it was frequently informative about topics I'd not expected to be informed about. Torrey should have picked a more accurate title, something like " A History of Freudian Thought in Post-War America, with a Digression on the Views of Anthropologist Franz Boas and Two of His Famous Graduate Students."

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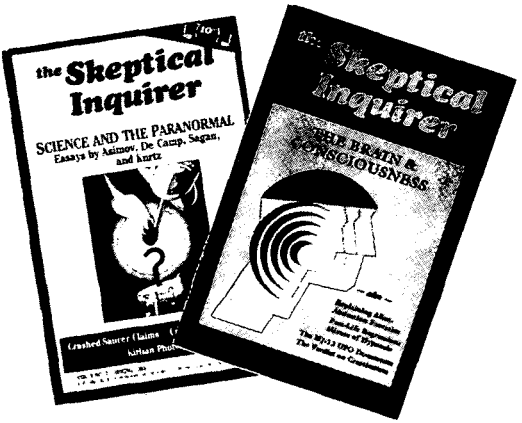

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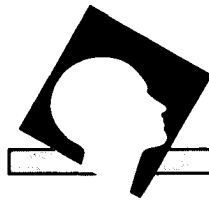
Articles of Note



Angier, Natalie. "U.S. Opens the Door Just a Crack to Alternative Forms of Medicine, *New York Times,* January 10, 1993, p. 1. The National Institutes of Health's new Office of Alternative Medicine will begin seeking proposals from researchers who want to explore the merits of therapies outside mainstream medicine. The office was established under Congressional pressure, and director Joe Jacobs, M.D., is completing guidelines for grant applications to fund studies that "seek to confirm or debunk unorthodox therapies." This thoughtful, in-depth article explores the pros and cons, with good comments from professionals who variously recognize both opportunities.

Binkley, Sue. "Wrist Activity in a Woman: Daily, Weekly, Menstrual, Lunar, Annual Cycles?" *Physiology & Behavior,* 52: 411-421, 1992. Study of circadian-rhythm effects on a woman volunteer who wore a wrist monitor on her arm for one year. The result of interest here: "Lunar phase had no effect."

Boorstin, Daniel J. "Afterlives of the Great Pyramid." *Wilson Quarterly,* Summer 1992, pp. 130-139. Long before the "pyramid power" fad, Egyptian pyramids had fascinated everyone from Napoleon to Isaac Newton. While scientists studied the monuments' structure, pseudoscience also flourished, as with John Taylor's nineteenth-century attempt to use the pyramid to prove that the British inch measurement was divinely inspired.

Bower, Bruce. "Consciousness Raising." *Science News,* October 10, 1992, pp. 232-266. The first of two articles on theories about the nature of conscious experience. Focuses on the work of Daniel Dennett, Benjamin Libet, Andy Young, Bruce Bridgeman, Andrei S. Monin, John Eccles, Stephen M. Kosslyn, Olivier Koenig, and others. The second article, "Rethinking the Mind," October 17, deals with a philosophical challenge facing cognitive science posed by John A. Searle.

Bryson, Chris. "Heavenly Deception." *Lingua Franca,* September/October 1992, pp. 37-42. The Professors World Peace Academy, a Reverend Moon affiliate, is acquiring a major interest in the University of Bridgeport in Connecticut. Angry debate continues as to whether the financially troubled private school is saving itself at too high a cost.

Bynum, Joyce. "Bigfoot: A Contemporary Belief Legend." *Et cetera,* Fall 1992, pp. 352-357. A summary of the Bigfoot legend, going back to 1884, comparing it to the Yeti and other "wild man" stories. The article summarizes the evidence against Bigfoot and possible explanations.

Castle, Terry. "Marie Antoinette Obsession." *Representations.* Spring 1992, pp. 1-38. Castle describes four turn-of-the-century women with delusions about Marie Antoinette. These include Helene Smith, a medium who believed herself to have been the tragic queen in one former

life (and a Martian in another), and two schoolteachers who claimed to have traveled through time on a trip to Versailles. Castle thinks Antoinette's alleged lesbianism made her an object of fascination for some women.

Drapkin, C. M. "The Return of Mary Ashford." *The Criminologist*, Summer 1992, pp. 45-50. Two women were found, apparently murdered, in the same part of the English village of Erdington, 167 years apart to the day. In each case a man named Thornton was tried for the crime and acquitted. Richard Deacon argued in *Incredible Phenomena* that this was a case of "astrological twinning." Drapkin dismantles mysticism in favor of coincidence and suggests that police familiarity with the old case led to the second Thornton being arrested.

"Eppur Si Non Muove: The Vatican's Half-Hearted Rehabilitation of Galileo Will Not Prevent the Recurrence of Errors of the Same Kind." *Nature* (Editorial), November 5, 1992, p. 2. *Nature* is not moved by the Vatican's belated acknowledgment that it wronged Galileo. "The Vatican owed him a less grudging recantation."

Figgis, Jane. "The Scientific Innocence of Children." *Search*, August 1992, pp. 208-209. Why don't college science students absorb what they are taught? Howard Gardner argues that teachers need to help students "unlearn" the world-view they learned in childhood.

Grelen, Jay C. "By The Book." *Columbia Journalism Review*, November/December 1992, pp. 16-17. A profile of two reporters at the Jesus People-owned magazine *Cornerstone*, whose investigative articles have debunked claims of Satanist groups. (See Maxwell article below.)

Hoeveler, J. David, Jr. "Inside Creationism." *Science* (Book Reviews), October 16, 1992, pp. 487-488. An essay/review of Ronald L. Numbers's book *The Creationists.*

Horgan, John. "Profile: Karl R. Popper the Intellectual Warrior." *Scientific American*, November 1992, pp. 38-44. Profile of the man called "the most influential philosopher of modern science." Popper's philosophy of critical rationalism deals with fundamental definitions of science and, among other matters, with what distinguishes pseudoscientific theories from scientific ones.

Long, Thomas G. "Myers-Briggs and Other Modern Astrologies." *Theology Today*, October 1992, pp. 291-295. A skeptical critique of the well-known Myers-Briggs Type Indicator (MBTI) of basic personality types.

Maxwell, Joe. "Article Claims Warnke's Satanic Past a Fraud." *Christianity Today*, August 17, 1992, p. 50. Mike Warnke's 1973 book *The Satan Seller* tells of his involvement in a satanic conspiracy, and is often quoted as evidence of such plots. An article in the Christian magazine *Cornerstone* argues that the book is fabricated.

Petit, Charles. "Big Bang Story Has Dark Side for Reporters." *Science-Writers* (National Association of Science Writers), Fall 1992, pp. 1-3. Critique of mainstream newspaper reporters' coverage of the now-famous COBE satellite results. Finds that many reporters wrongly stated or implied that the discovery of ripples in the cosmic microwave background had at last vindicated an embattled big-bang theory, when in fact the big bang itself has been accepted by almost all cosmologists since 1965. (It is details

of the immediate aftermath of the big bang that are still somewhat in contention.)

Scanlon, Matthew, and James Mauro. "The Lowdown on Handwriting Analysis: Is It for Real?" *Psychology Today*, November-December 1992, pp. 46-58, 80. A puff piece for graphology consisting solely of the transcription of a totally uncritical interview with a graphologist, Andre McNichol. *Psychology Today* owes its readers much more than this on this shady subject.

Siemens, David F. "Some Relatively Non-Technical Problems With Flood Geology." *Perspectives on Science and Christian Faith*, September 1992, pp. 169-174. A Christian philosopher dismantles the Creationist view of the Flood with simple arguments. For example, on leaving Noah's Ark, why did all monotremes and most marsupials go to Australia?

Tavris, Carol. "Beware the Incest-Survivor Machine." *New York Times Book Review*, January 3, 1993, pp. 1, 16-17. Critical essay on recent spate of books supposedly identifying the symptoms of incest. "The trouble is that the same list could be used to identify oneself as someone who loves too much, someone who suffers from a self-defeating personality disorder, or a mere human being in the late 20th century."

Vladimirov, Sergei. "Divining Crime." *Sputnik*, April 1992, pp. 126-128. A brief credulous article about "Nikolai," a Moscow policeman who supposedly solves crimes with telepathy.

Weldon, Fay. "Down Among the Scientists." *New Scientist*, December 19/26, 1992, pp. 40-41. A good-humored but still pointed criticism, from a writer and representative of the presumptive wooly-thinking liberal arts, of "scientism." This is the implied belief in the omnipresent competence of science, combined with the notion that the "ethics" of science are identical with personal and social morality—or, as Weldon puts it, "if it's science it must be right." She's actually responding, "waving a white flag," to criticisms by scientists of an earlier article on the subject she'd been asked to write for the *Daily Telegraph*. The core of concern here is scientific hubris and the unbecoming lack of humility exhibited in some scientists' thinking. It best be avoided, and reading such constructive criticisms is one way to see why.

Wilson, Philip K. " 'Out of Sight Out of Mind?': The Daniel Turner-James Blondel Dispute Over the Power of the Maternal Imagination." *Annals of Science*, 49 (1992): 63-85. Historical examination of a dispute in London in the late 1720s. Turner accepted the long-standing belief that a pregnant woman's imagination could be transferred to her unborn child, imprinting the fetus with various marks and deformities. Blondel sought to refute this view on rational and anatomical grounds. The dispute raised the phenomenon of the maternal imagination from an issue of folk belief to a concern of eighteenth-century medicine.

—Kendrick Frazier and Robert Lopresti

Follow-up

Colorado Board of Nursing Supports Therapeutic Touch, Skeptics Continue Challenge

BELA SCHEIBER

The offering of credit for dubious and pseudoscientific nursing courses was recently challenged by the Rocky Mountain Skeptics (RMS) (*SI*, Winter 1993, pp. 172-173).

On January 30, 1992, representatives of RMS asked the Colorado Board of Nursing: "How can Board-recognized, credentializing organizations be made responsible and accountable for the content of continuing-education classes?" While Therapeutic Touch (TT) was only one of many questionable courses stated as a concern, it soon became the central focus of the battle to follow.

RMS received a letter from the Board dated March 10, 1992, proclaiming the formation of a "subcommittee to address the question and present a recommendation back to the Board." In a March 28 courtesy response to the letter, the Vice President of RMS, Linda Rojas, wrote that "the Rocky Mountain Skeptics stand ready to assist in any way we can."

In anticipation of being asked to testify in front of the subcommittee we were busy preparing our case when a letter dated June 8 firmly brought us back to reality. In this letter we were told that the subcommittee had met and had presented its conclusions to the full Board May 28 and 29 "regarding the awarding of continuing education units to nurses for the study of therapeutic touch and other non-traditional complementary healing modalities. After review of the research literature and discussion, the subcommittee had made the recommendation that the Board should continue to award continuing education credit to such programs. After discussion, the Board voted to reaffirm its previous determination that therapeutic touch was an acceptable study area for continuing credit."

This piqued our curiosity. Who was on the subcommittee? What led to their conclusions? Why were we, the presenters of the concern, only told the outcome in general terms? We wanted to know. After requesting, and receiving, minutes and a full copy of the subcommittee's recommendation, we became even more concerned about the serious lack of critical skills within the nursing profession.

Although we were not invited to testify at the subcommittee's hearings, others were allowed to present a favorable case for TT in front of the full Board. Among the four witnesses was Janet Quinn, who is an associate professor and senior scholar at the University of Colorado Health Sciences Center School of Nursing. Quinn provided the Board a reading list (Quinn 1992) of 200 entries, among

which were more than two dozen papers that she had written, including her master's thesis and doctoral dissertation (both done at NYU under Dorothy Krieger, the leading TT advocate).

After hearing from the four advocates, reviewing the 15-page reading list, and reading the subcommittee's recommendations, the Board voted 8-0, with one abstention, to accept the recommendations.

The subcommittee's report to the State Board of Nursing read in part:

> Based on an increasing volume of research and clinical literature supporting the effectiveness of Therapeutic Touch in the easing of human suffering and stimulation of healing, the State Board of Nursing of Colorado, like other State Boards of Nursing all over the country, should continue to be an advocate for the public safety and for patient's rights to access the full range of caring and healing interventions by continuing to acknowledge continuing education units earned for the study of Therapeutic Touch. Therapeutic Touch, as a nursing intervention, is being taught to nurses through many colleges and universities, and by the National League for Nursing through its continuing education videotape series on Therapeutic Touch. It is completely within the mainstream of modern nursing practice. Moreover, we encourage the Board to continue to acknowledge continuing education efforts undertaken by nurses in related complementary healing modalities, even when scientific investigation of such modalities is incomplete, for two reasons. First, the lay public is becoming increasingly sophisticated in these complementary modalities and nurses should be familiar enough with them to be able to provide adequate information at the request of patients. Second, these modalities can be used as meaningful adjuncts to, and not replacements for, standard medical and nursing care.

What constitutes "increasing volume of research and clinical literature supporting the effectiveness of Therapeutic Touch"? Of the 200 entries found in Quinn's list, the works can be characterized and enumerated as follows:

Appearance in the popular press (*Woman's Day, McCall's, People, American Baby, New Realities,* etc.)	13
Unrelated publications, incidental mentions, and popular works. (*How to Meditate, The Tao of Physics, Freedom in Meditation, The Aquarian Conspiracy,* etc.)	30
Articles in journals with little or no scientific reputation (*American Theosophist, International Journal of Parapsychology, Re-Vision,* etc.)	35
Non-peer-reviewed book appearances (*Spiritual Aspects of the Healing Arts, The Many Facets of Touch,* etc.)	39
Unrefereed articles in newsletters and trade publications	31
Dissertations, master's theses, and research reports	19
Authentic-sounding research papers	33

The last two categories constitute only 26 percent of the total and were placed in the "possible" category of valid research. A further breakdown of these 52 works yields:

Correspondence responding to attacks	2
Dissertations and theses that are oblique to the topic	6

Surveys with no original work	5
Probable surveys with no original work	6
Repackagings of earlier works	3
Possibly authentic research papers	16
Genuine research reports	14

We took a closer look at the 30 in the last two categories and found:

Contrarian research or responses	15
Possibly authentic research papers	5
Supportive dissertations and theses (Heidt 1979; Quinn 1982; Guerrero 1986; Pomerhn 1987)	4
Supportive papers (Heidt 1981; Keller 1983; Krieger 1975; Quinn 1984; Heidt 1990; Kramer 1990)	6

We were unable to locate the 5 in the "possibly authentic" subcategory. We were therefore generous here. Note that of the 30 in the list above, 15 dispute the TT hypothesis. Of the 10 identified as supportive research, half have already received some scrutiny (Clark and Clark 1984; Clark 1984). These 10 break down as follows:

Experimental designs in dispute	5
Could not be replicated	1
Unevaluated research	4
Validated or replicated research	0

Following is an annotated list of these 10 papers:

Heidt 1979 (sample size = 90; attempted replication by Hale failed to confirm)

Quinn 1982 (sample size = 60; claims to investigate only difference between contact and noncontact techniques; assumes that TT is already proved)

Guerrero 1986 (sample size = 30)

Pomerhn 1987 (sample size = 40)

Heidt 1981 (critiqued in Clark and Clark 1984, and Clark 1984: no

Colorado Board Reaffirms Support of TT

On January 28, 1993, the Rocky Mountain Skeptics (RMS) again appeared before the Colorado Board of Nursing. This time the group charged the Board with violating Colorado statutes in the official discharge of its duties and quoted from the state statutes: "In order to safeguard the life, health, property, and public welfare of the people of this state and in order to protect . . . from the unauthorized, unqualified, and improper application of serices by individuals in the practice of nursing, it is necessary that a proper regulatory authority be established" (CRS 12-38-103). Furthermore, in defining the "practice of professional nursing," the legislature declared it to be ". . . the performance of both independent nursing functions and delegated medical . . . functions . . . which [require] such specialized knowledge, judgment, and skill involving the application of principles of *biological, physical, social, and behavioral sciences* [italics added] as are required for licensing as a professional nurse. . . ." (CRS 12-38-103[10]).

After a two-hour discussion the Board moved to reaffirm its May 1992 vote to continue to accept TT for credit. As in its previous decision it once again avoided responding to RMS's concerns and refused to consider the issue of scientific validation for nursing practice.

—*B.S.*

objective data and no control for placebo effect)

Keller 1983 (critiqued in Bullough and Bullough 1993: poor design)

Krieger 1975 (critiqued in Walike et al. 1975, Clark and Clark 1984, and Clark 1984: poor design and subject selection)

Quinn 1984 (critiqued in Clark and Clark 1984, and Clark 1984: no objective measures used)

Heidt 1990; Kramer 1990 (small sample, "observer participant").

Most disturbing on Quinn's list are the 15 dissertations that attempt, but fail, to confirm the TT hypothesis and apparently are used to "bulk" up the list. Also, a review of the references cited by some of the contrarian papers in her list reveals material that Quinn inadvertently omitted.

In an age when any dramatic public-health issue generates thousands of scientific papers, it is difficult to imagine *why* TT has produced only a handful in nearly 20 years. Certainly it is premature to view this as an "increasing volume of research and clinical literature supporting the effectiveness of Therapeutic Touch."

Many thanks to members of the Rocky Mountain Skeptics who helped with this report: Linda Rojas, Bill Aldorfer, Carla Selby, and Martin Tobias, and with special thanks to Larry Sarner.

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Bela Scheiber is president of the Rocky Mountain Skeptics.

Letters to the Editor

Isaac Asimov

I am writing to thank you and the contributors to the tribute to Isaac Asimov. His passing has not received nearly the recognition in the media that I would have thought appropriate; hence the salute from those whose opinions meant much to him is all the more fitting and valued.

Ed Shields
Meridian, Mass.

Isaac Asimov was one of the world's great intellectuals. I think that at heart he was first and foremost a teacher. To me, the greatest accomplishment of his great career was the bringing of the wonderful world of science to his readers in terms and concepts that were understandable. He would not oppress his readers with a stuffy approach to science, but would put it in sparkling and practical terms that the interested lay people could comprehend and appreciate. Even in most of his science fiction he was a teacher. Most of this fiction would in some varying degree educate the reader on some scientific principle or another.

The world is the poorer for his passing but the richer for his having lived.

Thomas G. Rusk
Villisca, Iowa

I was greatly saddened by the loss of a lifelong hero, Isaac Asimov. Over the years we exchanged a few notes. A little more than a year ago I asked him if he could provide a back-cover quote for my book *Mazes for the Mind: Computers and the Unexpected*. He wrote back to me:

> I have given up the practice of reading through long manuscripts. I wish I were 35 again, but, alas, my doctors tell me it is not possible.

The world feels a deep loss. At least I hope it does. I wonder, in our nation where interest in science and rational thinking seems to be on the wane, how many teenagers have heard of Isaac Asimov. If the answer is less than 10 percent, I propose that schools across the nation set aside April 6 as "Isaac Asimov Day," when students and teachers would discuss his works and life, and select passages for reading and study. My own book is finally published and dedicated to several longtime inspirers: Isaac Asimov, Martin Gardner, James Randi, and Arthur C. Clarke.

Clifford A. Pickover
IBM Research Staff Member
IBM Thomas J. Watson
Research Center
Yorktown Heights, N.Y.

Wonderful is the idea of a commemorative stamp to honor Asimov. He is not only an authentic national treasure of the United States but also a genuine treasure of the world. Don't forget the fact that there are many Asimov fans in Japan and in the world! He was the greatest educator for me. He taught me the joy of thinking scientifically and explaining science and other human endeavors. In his enormous volume of books, he interrelated science, history, and literature; past, present, and future; ideas and society. Thank you Dr. Asimov!

Motofumi Kuze
Utsunomiya, Japan

I was intrigued by Paul Kurtz's comment that Isaac Asimov "never imagined people would believe all that crap" about ESP and other paranormal phenomena that appeared in his novels. Unfortunately, many of us who grew up reading science fiction believed in much too much crap that passed and still passes as science. I think the problem was that we (and, to be honest, most science-fiction writers) did not make a distinction between speculative science fiction and fantastical science fiction. The first demands that any powers, devices, or technologies resident in the tale obey the known laws of physics (albeit a bit of poetic stretching is allowed). The second, the fantastical, creates an alternative law and proceeds from there (although this law should be internally valid) or simply ignores existing laws without explanation.

In my own case I confused the possibility of life existing elsewhere (a sine qua non for science fiction) with the certainty that humanlike creatures have visited the earth, affected human history, constructed wonders, and occasionally kidnapped our women. Perhaps I was especially gullible, but I have heard this lament oft repeated by others. Even today, writers and publishers do not help; they create a separation between science fiction and fantasy fiction; but for them that boils down to spaceships vs. elves. I wonder how many young SF fans think that "Hobbits" and "Dragons" are fantastical but that teleportation and hyperspace travel are just around the corner.

All this is to emphasize the point that several of the tributes to Asimov made: his greatest contribution to humanity was his science prose rather than his fiction. Nevertheless, anyone interested in luring young minds to reason should provide both.

David Perlmutter
Minneapolis, Minn.

As a footnote to James Randi's anecdote about Isaac Asimov's supposed sensitivity toward having his name misspelled, I'd like to document how it all started. Asimov was a contributor, both as author and letter hack, to an early science-fiction pulp, *Planet Stories*. In the Fall 1940 issue of that magazine, a letter was published from one "Isaac Asenion." A couple of subsequent letter writers correctly guessed the identity of "Asenion," but went on to misspell his first name as "Izaac." Isaac responded in a letter in the Spring 1941 issue, wherein he proclaimed in mock dudgeon, "My name is Asimov, not Asenion, curse you all!" Nevertheless, I believe it was quite a while before his many friends ceased to gleefully call him "Asenion."

Norman F. Stanley
Rockland, Maine

In *Memory Yet Green*, Asimov mentions me because we were in the same class at Boys High School in Brooklyn, New York (Class of 1935). I happened to get a few grades even higher than his, so he remembered me. In college my grades went down and his up, and he has surpassed me ever since.

What Kendrick Frazier wrote (*SI*, Summer 1992) is a true and excellent summary of Asimov's talents, work, and achievement.

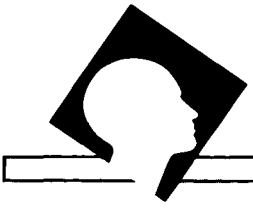
> Isaac Asimov [was] perhaps the greatest explainer and popularizer of science of all time. . . . Few writers have ever produced a body of work of such substance, magnitude, breadth, and diversity.
>
> He was a relentless defender of reason, rationality, and the values of science. . . .

It was a unique pleasure and privilege for me to have been his classmate, to have received several letters from so busy a man answering my questions, to have spoken to him on the phone those few times.

His legacy to me is his books on my shelves in three rooms!

Karl O. Hill
Larchmont, N.Y.

New Books



Ask Marilyn. Marilyn vos Savant. St. Martin's Press, 175 Fifth Ave., New York, NY 10010. 1992. 316 pp. $19.95, hardcover. A compilation of Marilyn vos Savant's columns from *Parade*, the Sunday newspaper magazine supplement. Of special interest here are her columns on the now-famous Three-Door Problem, questions about science and nature, riddles and brain-teasers, and her no-nonsense answers in a brief chapter on "Mysticism" (Q: "Are there any people who foretell the future, such as numerologists and psychics, who have been documented as being legitimate? A: Nope.")

Culture, Religion, and the Sacred Self. Jacob Pandian. Prentice Hall, 15 Columbus Circle, New York, NY 10023. 221 pp. $29.00, paper. A critical introduction to the anthropological study of religion. Of particular interest here might be the author's discussion of the role of science and religion, in Chapters 19 and 20 (New Age phenomena), and Chapter 10 (a theory of religion).

Mathematical Cranks. Underwood Dudley. The Mathematical Association of America, 1529 Eighteenth St., N.W., Washington, DC 20036. 1992. 361 pp. $25.00, paper. The first book on mathematical cranks: people who think that they have done something impossible, like trisecting the angle or squaring the circle; people who think they have done something that they have not, like proving Fermat's Last Theorem; obsessive people who have eccentric views, from mild to crazy; and people who have in common something to do with mathematics and something odd, peculiar, or bizarre. A good-humored collection of examples designed to give readers an idea of what cranks do, how they do it, and what keeps them going.

Missing Pieces. Robert A. Baker and Joe Nickell. Prometheus Books, 700 East Amherst St., Buffalo, NY 14215. 1992. 339 pp. $23.95, hardcover. A handbook on how to investigate ghosts, UFOs, psychics, and other mysteries. The authors, a psychologist and a noted investigator, provide practical information on checking out every type of mysterious anomaly, including UFO sightings, ghost hauntings, psychic feats, and other weird events. Provides useful suggestions on how to conduct investigations, interrogate witnesses, recognize deception, and use the mental and electronics tools of the trade.

Ponzi Schemes, Invaders from Mars and More Extraordinary Popular Delusions and the Madness of Crowds. Joseph Bulgatz. Harmony Books, 201 East 50th St. New York, NY 10022. 1992. 384 pp. $12.00, paper. Inspired by Charles Mackay's 150-year-old classic, *Extraordinary Popular Delusions and the Madness of Crowds*, the author shares stories of frauds, scams, and deluded behavior. Subjects include Orson Welles's "War of the Worlds" broadcast, Bat-men on the Moon, dowsing, perpetual motion, soccer-crowd madness, lottery fevers, and Jonestown and other cults.

Science or Pseudo? The Mars Effect and Other Claims. Proceedings of the Third EuroSkeptics Congress, October 4-5, 1991, Amsterdam. Edited by J. W. Niehuys. Stichting Skepsis, Postbus 2657, 3500 GR, Utrecht, The Netherlands. 1992. 226 pp. DGL 25 (US $12.50), paper. Contributions are divided into three broad categories: general expositions about "the paranormal," reports with a more or less clear specific empirical content (e.g., dowsing claims, crop circles), and six papers discussing the "Mars effect."

Shamans, Priests and Witches: A Cross-Cultural Study of Magico-Religious Practitioners. Michael James Winkelman. Arizona State University Anthropological Research Papers No. 44, Arizona State University, Tempe, AZ 85287-2402. 1992. 191 pp. $27.50, paper. Based upon a Ph.D. dissertation, this book integrates the findings of a cross-cultural study on types of magico-religious practitioners within the context of anthropological and sociological studies of such phenomena.

Understanding Science. Arthur N. Strahler. Prometheus Books, 700 E. Amherst St., Buffalo, NY 14215. 1992. 409 pp. $25.95, hardcover. A scientist's effort to make the philosophy of science accessible and intelligible to science students, their teachers, and those with a liberal arts education. Part One emphasizes the workings of science and deals with what science is and is not. Part Two attempts to deal seriously with criteria of demarcation of the major separate knowledge fields. Strahler's goal is to help bridge the gap between science philosophers, often occupied with the way things "ought to be" and caught up in abstract and nearly unintelligible discourse, and practicing scientists, who have a practical view of things and need to concentrate on getting the job done.

The Write Stuff. Edited by Barry L. Beyerstein and Dale F. Beyerstein. Prometheus Books, 700 East Amherst Street, Buffalo, NY 14215. 1992. 515 pp. $49.95, hardcover; $21.95, paper. Evaluations of graphology—the study of handwriting analysis. Contributors, including both practicing graphologists and critics from many fields, supply a balanced evaluation of the claims that personality, aptitude, and psychological and physical health can be determined through handwriting analysis. Includes discussion of why graphology seems so accurate to many personnel managers when it has been unable to pass objective tests of validity. See review in this issue.

—*Kendrick Frazier*

Asimov, first name of Isaac,
Could really lay it on thick.
He had what it took,
To write a good book,
But nearly five hundred? Neat trick!

Nelda Sander
Stillwater, Okla.

I especially enjoyed your tribute issue to Isaac Asimov. The world seems somehow darker with his death.

Dennis Hoey
Citrus Heights, Calif.

Gaia without mysticism

Phil Shannon's article, "Gaia Without Mysticism" (*SI*, Fall 1992), comes precariously close to embracing the very errors of personification and teleological mysticism that he decries in New Age devotees of Gaia Mater. The concept of "Gaia" is, on every front, an artifact of sloppy and unscientific thinking. Excusing it as a useful metaphor or as a convenient verbal signifier of some profound insight into science does not convert such terminology into science. Nor is every theory put forward by someone with a degree in science innately valuable or intrinsically worth more than a cursory evaluation.

Lovelock and Margulis's insight into the apparent self-sustaining nature of certain systems is in itself not terribly profound. Scientists have assumed for years that geological and biological interactions must be understood in order to explain the composition of the atmosphere. Indeed, some three decades ago, when I was still in high school, we constructed what was even then a rather standard educational apparatus: Snails, goldfish, and water plants were placed in a sealed bottle of water that was then set where the sun could strike it. Sure enough, an apparently homeostatic balance was maintained, and all three species in the bottle appeared to prosper.

To amuse my friends, impress my teacher, and avoid going on to the next chapter assignment, I proposed to my adolescent compeers that the entire system so created could be considered a single organism, simply because of its apparently self-regulatory characteristics. The arguments raged for days. Very quickly, they moved away from the direct object of the discussion and toward the whole problem of when one could and could not define a system as a single entity. No answer was forthcoming. None can be. Words are, after all, merely labels by which we organize our sense impressions. A different organization of those impressions calls for a different set of labels. . . .

John H. Fowler
Houston, Texas

Phil Shannon's article on Gaia twice states that Earth's temperature should be 300° C, given its planetary location. Shannon presumably gets this temperature as a *linear* interpolation between the temperatures of Mars and Venus, but there is no scientific reason why this calculation should have anything at all to do with Earth's temperature.

The temperature of a planetary body near the sun is basically determined by the balance of heat-flow absorbed by the body from the sun and heat-flow from the body by thermal emission. The heat absorbed from the sun is proportional to the inverse of the distance from the sun squared. For an idealized "gray" body the heat emitted is proportional to the temperature to the fourth power. For a body in thermal equilibrium the temperature is therefore proportional to the *square-root* of the inverse distance from the sun. For Venus, Earth, and Mars, the distances, temperatures, and proportionality constants are:

Planet	Distance (kms)	Temperature	Constant
Venus	108,000,000	477°C (750°K)	7,790,000
Earth	150,000,000	13°C (286°K)	3,500,000
Mars	228,000,000	- 53°C (220°K)	3,320,000

The fact that Venus and Mars, which are both lifeless planets, have completely different constants shows that you

cannot simply predict Earth's temperature from the temperatures of its neighbors. The ability to do calculations like averages, interpolations, and so on, does not guarantee that they are appropriate or mean anything. A test of the Gaia hypothesis with regard to temperature requires a far more sophisticated analysis than that given here, or in Shannon's article.

Robert Clear
Berkeley, Calif.

The Gaia hypothesis seems to have left itself wide open to incursions by mystics by taking the easy, evasive way out of two fundamental questions—those of the origin and extinction of life. The teleological tenets of Gaia cannot conceivably extend to the primeval time when life had not yet appeared on Earth. Who or what then was responsible for making the conditions on earth conducive to the generation of life?

Anutosh Moitra
Yorktown, Va.

Phil Shannon is certainly correct when he writes: "Gaia, both as scientific theory and as environmental philosophy, is . . . too valuable to be unjustly tainted by association with the New Age." His accessible and descriptive article would deserve infinitely wide distribution if it weren't for his thoughtless, and unnecessary, malignment of the microcosmos. Our subvisible world, replete with relevant splendors, modulated surface conditions on this planet long before the "higher" *Homo sapiens* upstart left Africa for the cooler realms in both directions. What does "higher" mean? Taller? Larger? Grander? More recently evolved? Faster growing? More populous or numerous? Morphologically more complex? Or, as I suspect, it means just a little closer to Shannon's own relatives.

There are no single-celled animals or plants. Nor are there "higher" animals or plants. When Shannon refers to the "single-celled microbes" he probably means bacteria, yet probably most of them in nature are multicellular, as J. Shapiro at the University of Chicago has been trying to say for years. As for the 250,000 or so species of protoctists, they have no spokespersons. To most people, amoebae, apicomplexans, ciliates, hypermastigotes, foraminifera, diatoms, chytrids, and the rest, either don't exist or are germs, red-tide shellfish poisons, or parasites. Until we really learn to respect our planetmates for what they do to sustain and recycle our environment, we cannot really know to respect ourselves.

Shannon has done a fine job bringing to our attention the necessity for global science. He has aided our thinking within Gaian paradigm. Let's hope that next time he recognizes the relevance of the microbial world as well.

Lynn Margulis
Amherst, Mass.

*Lynn Margulis and James E. Lovelock, whose letter follows, are the originators of the Gaia hypothesis.—*ED.

Thank you so much for the splendid article on Gaia.

It was a rare pleasure to read a sensible, balanced comment on Gaia. I am an old-fashioned scientist who has tried to practice science by the rules and always be objective about nature. It has not been easy, during the past twenty years since Gaia was first introduced as a hypothesis, to be subject on one side to dogmatic criticism from the scientific establishment and on the other to fulsome support from the New Age. I longed for a fair comment and at last it has appeared in your journal. My thanks go to you and Phil Shannon, the author.

James E. Lovelock
Coombe Mill, St. Giles
on the Heath
Launceston, U.K.

Phil Shannon responds:

John Fowler is in good company (with Stephen Jay Gould, among others) in claiming that the concept of Gaia is "not terribly profound" or new. Why then does the old and uncontentious science of self-regulating homeostasis in the new planetary bottle of Lovelock and Margulis's theory offend so many palates? A cursory reading of Lovelock and Margulis (which is what the New Age enthusiasts give them) may leave a taste of "teleological mysticism," but this is not borne out by any closer reading.

Certainly as the degree of complexity grows from "snail, goldfish, and water-plant" systems to the Earth, the scope for scientific error grows. Robert Clear rightly points to one gray area—Lovelock's prediction that, without the life-controlled CO_2 thermostat, the Earth's surface temperature should be around 300° C (based on its position relative to Venus and Mars) instead of its hospitable 13° C. This "linear interpolation" of 300° C is less appropriate than Clear's method, although his calculations are for an "idealised 'gray' body" and the greenhouse effect is one factor that plays merry hell with any *calculations (Venus's high temperature is caused by its atmosphere of 96% CO_2).*

Nevertheless, if Gaia's performance on explaining the temperature anomaly is rendered less impressive, this may be no more harmful than removing the fifth wheel from a car, or Zeppo and Gummo from the Marx Brothers, because what is left may still be solid support for the theory viz the constancy of the Earth's 13° C while the sun has grown 30-percent hotter, the chemical disequilibrium of the Earth's atmosphere, etc., and the maintenance of these anomalous properties by living organisms. Clear's is the type of scientific interrogation that the Gaia hypothesis needs.

I defer to Lynn Margulis, "the Wizard of Ooze," who, from the muddy haunts of microbes, reminds us of the crucial role of the microbial world in global ecology and science. And I will bet a subvisible microcosmos or two that the New Age won't allow their *Gaia to get mud on her boots. Oblations to hypermastigotes? Orisons to apicomplexans? Worshipping at the foot of the compost heap? Not likely for those who prefer the glamour of gods and mysticism to the hard thinking of science and understanding.*

The curse of the runestone

The SKEPTICAL INQUIRER and its contributors usually adhere to the highest standards of objectivity. *SI* and John Whittaker have seriously fallen from grace with the publication of Whittaker's article "The Curse of the Runestone: Deathless Hoaxes" (Fall 1992).

Whittaker makes the mistake of accepting without question the proposition that the runestone carving is a hoax. It is apparent that he failed to examine the substantial body of scholarship on the other side of the question, in particular, the 1982 book of R. A. Hall, to which he alluded. Whittaker simply parrots what some others have claimed, that "the runes are wrong for the date given, and the language reflects the nineteenth-century heritage of a Swedish-American farmer."

Far from simply following the runes in the *Well-Informed Schoolmaster*, the nineteenth-century forger "would . . . have had to know certain inscriptions which didn't come to light or were not identified or discussed until the nineteen hundreds" (Hall, p. 46).

With respect to the language of the inscription, "there is nothing in the language of the Kensington Stone that indicates the influence of nineteenth century English or Scandinavian languages. Certain of the features, both linguistic and graphemic, are specifically ancient, and unlikely to have been known to any except a most learned nineteenth century forger" (Hall, p. 49).

Whittaker says the farmer claimed to have found the stone in the roots of a tree. I myself, a native of the area, knew personally at least one individual who saw the stone still clasped in the roots of the tree with clumps of earth still adhering. This was the late Henry Moen of Alexandria, Minnesota, who at the time of the discovery was about ten years of age.

Indeed, the question of whether the

inscription was a hoax is far from closed and in fact the weight of *reasoned* evidence goes in favor of the authenticity of the carving.

Andrew P. Engebretson
St. Paul, Minn.

John Whittaker's article ill serves the SKEPTICAL INQUIRER's goal of "the application of reason." Where Whittaker could have used reason, he chose instead to use ridicule.

His use of ridicule was particularly obnoxious when he claimed that the stone's supporters believe that the Vikings traveled 140 miles a day over rough terrain. Actually, Hjalmar Holand maintained that "day's journey" measured distance, not time. Holand said that " 'day's journey' means seventy-five miles," no matter how long someone actually took to traverse the distance. (Quotation from p. 192 of *Norse Discoveries & Explorations in America*, the reprint of *Westward from Vinland*. See also Holand's discussion on pp. 188-192 of that book.)

Holand's opponents are well aware of his actual position. For example, see Erik Wahlgren on page 76 of *The Kensington Stone: A Mystery Solved:* "[Holand assumed] that the phrase '14 days' journey' meant, not a journey of fourteen days' duration, but an arbitrary measure of distance, a day's journey being taken to mean a fixed unit of 80 miles, whether on land or on sea."

Holand may have been wrong, but I can't find that out from Whittaker's article. Whittaker also failed to discuss the alternate belief that the "sea" mentioned on the stone was Lake Superior, not the much further Hudson Bay. (See *Westward from Vinland.*) Those who believe in that don't have the same type of distance problem.

Whittaker should have discussed people's actual beliefs rather than attributing easily ridiculed positions to those with whom he disagrees.

George H. Johnston IV
Bowie, Md.

The SKEPTICAL INQUIRER has been, since its inception, a model of the objective examination of claims of the paranormal and fringe-science. However, my respect for its objectivity has been somewhat shaken by "The Curse of the Runestone: Deathless Hoaxes." Whittaker asserts: "To modern scholars, the Kensington runestone is insignificant, because it is quite clear that it is a hoax."

A few years ago I was in Alexandria, Minnesota, with time on my hands and visited the museum that is prominently located there. I saw the Kensington runestone in its floodlighted case and was moved to check at the local library on its authenticity. I was not a native Minnesotan (nor of Scandinavian descent) and had not previously read about the stone. The encyclopedias described the stone and said that most scientists had concluded that it was fraudulent.

Back in St. Paul, browsing in my favorite bookstore, I found and bought *The Kensington Rune Stone: New Light on an Old Riddle*, by Theodore C. Blegen, dean emeritus of the University of Minnesota graduate school. Although he reasoned entirely from an examination of the circumstances and the personae involved, Blegen concluded: "The inscription is a fake." After my admittedly cursory reading, I kidded my acquaintances in Minnesota, many of whom were of Scandinavian ancestry, with the jibe that Alexandria is "the only town in the country with a museum dedicated to a hoax."

Then I read, in a column by a professor whose special interest was scientific anomalies (in, of all places, the *Ellsworth* [Maine] *American*) a reference to a new book, *The Kensington Rune-Stone Is Genuine*, by Robert A. Hall, Jr., professor emeritus, Cornell University. (Hornbeam Press, 1982, now available from the Runestone Museum, Alexandria, MN 56308). I got and read that book, and found Hall's account of his studies and conclusions more persuasive than Blegen's. . . .

Glenn Critton
St. Paul, Minn.

John Whittaker missed the real reason the Kensington affair so far is deathless: the evidence on both sides of the controversy is equivocal. This situation is likely to remain until someone determines the age of the grooves by a method that can distinguish changes that take 600 years from those that take only 100.

The linguistic evidence now seems to favor authenticity as a result of Richard Nielsen's detailed analysis (1986-1989) showing that the language of the stone is closer to that of fourteenth-century Bohuslän, Sweden, than to that of nineteenth-century Minnesota (*Epigraphic Society Occasional Publications*, 15: 47-61; 16: 51-81; 17: 124-178; 18: 110-132).

As for Whittaker's belief that Ohman carved the stone, I thought that Alf Sommerfelt cleared that up 30 years ago when he asserted that "Everyone knows Fogelblad did it."

James L. Guthrie
Ashton, Md.

Regarding John Whittaker's interesting article on the Kensington runestone; the identity of the hoaxer is far from being as settled as Whittaker seems to think. While Wahlgren, who covered the local background thoroughly, leans heavily toward Olof Ohman, the farmer who found the stone, others, like Blegen, prefer the defrocked Lutheran minister and itinerant schoolmaster, Sven Fogelblad.

When everything is considered, including Ohman's background and behavior, to my mind it is much more probable that he was the victim of a hoax, rather than a hoaxer. Of the locals who might have cut the stone, Fogelblad seems the most likely choice, although this is by no means a certainty. It would be best to leave the question open.

Back in the 1940s, the stone was accepted by many American anthropologists as probably genuine, although of no great interest for their studies, since it would have been an intrusive accidental. Since then much more negative evidence has turned up, and I am sure that these men, if living, would disavow it.

Everett F. Bleiler
Interlaken, N.Y.

John Whittaker's article took me back some 40 years, to when I lived in Minneapolis and knew Clifford Simak, who in his spare time was one of the great science-fiction writers. Once, when a colleague visited town, several of us had a luncheon for him. The colleague, a socialist, began talking about the kept American press, in which the truth was never permitted to be told. Simak replied in his quiet fashion that he had been a newspaperman all his working life, had written about practically every subject under the sun, and had never once been made to slant a story or seen it suppressed because of its content. Then he paused to think and admitted that that wasn't quite so. Several years before, he had been sent downstate to do a piece on the Kensington stone. He arrived open-minded, upon investigation saw it was clearly a fake, and wrote accordingly. His editor told him that *this* was something no Minnesota paper could print and killed the story.

Poul Anderson
Orinda, Calif.

John Whittaker responds:

Holand's equivocation about the distance recorded on the stone is typical of the special pleading used by runestone supporters. As Wahlgren points out, "14 days journey" either means 14 days time, which is impossible, or as Holand argued, an arbitrary measure of distance (about 80 miles), in which case you have to believe that the Norse could keep accurate track of distances while following winding rivers and beating through brush. Or it is only a rough estimate of distance, in which case you can make it fit anything you like.

Linguistic arguments for or against the runestone are difficult for most of us to

evaluate. Most scholars of Scandinavian languages agree the stone is a hoax. Whether Ohman or Fogelblad, or both, concocted it is an interesting question; both appear to have had the ability. As an archaeologist, I fall back on examining the context of a find. The circumstances of the Kensington find are questionable, the supporting "evidence" of other "finds" nothing but misinterpreted post-Columbian artifacts and imported antiques like the Beardmore relics. The cultural context is also important. A journey by Vikings on a wild-goose chase to the interior of a wilderness continent makes little sense; a hoax by prideful immigrants socking it to the nineteenth-century establishment does make sense, and there is good supporting circumstantial evidence. The simplest explanation is not always right, but it is usually the best bet.

Most of the comments avoided the main point of my article. The Kensington runestone attracts so many warm followers because it is fun to think about, romantic, exciting, good theater, and supports other strongly held beliefs, not because the evidence supporting it is good.

Compare Kensington to a good piece of evidence for Norse in North America. L'Anse aux Meadows is a site in Newfoundland, excavated in the 1960s (Ingstad 1971, 1977, 1982). It is a sparse site and not very romantic, but there are foundations for small grubby turf houses that compare very well with Norse farmsteads in Greenland, evidence of non-native practices like smelting, good carbon-14 dates clustering around A.D. 1000 as they should, and a few unspectacular but definitely European artifacts (bronze pin, spindle whorl, iron rivets). The site was competently excavated and analyzed, and the results were published, and it is now a Canadian National Park. It is quite conclusive evidence of Norse presence; the location and finds make sense according to the sagas and fit what we know of the way Norse lived, traveled, and colonized, and multiple lines of evidence give a coherent picture.

So why is L'Anse aux Meadows rarely mentioned by runestone supporters? Because it is not as exciting? I think so, but it is even worse than that. L'Anse aux Meadows sets a standard of evidence that Kensington supporters cannot match in any of the other purported Viking finds. They mostly ignore it because comparison to L'Anse aux Meadows illuminates the weaknesses of most other "Viking" material and shows it up for the collection of hoaxes and mistakes it is. Nevertheless, for many people, exciting nonsense is more convincing and interesting than unspectacular evidence, and, as I was trying to point out, this is especially true if, for various cultural or personal reasons, you want to believe it.

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Daytime stars

Readers interested in the legend that stars can be seen in the daytime through chimneys ("Observing Stars During the Daytime: The Chimney Myth," by Richard Sanderson, *SI*, Fall 1992) may want to look up an earlier discussion, by David W. Hughes: "On Seeing Stars (especially up chimneys)," *Quarterly Journal of the Royal Astronomical Society*, 24: 246-257 (1953).

Hughes surveys the science (what there is of it) and lore surrounding the legend, and provides a 32-item bibliography. Among other things, he points out that the sunlit ash particles might be mistaken for stars. Bradley E. Schaefer also touches on the legend in "Glare and Celestial Visibility," *Publications of the Astronomical Society of the Pacific*, 103: 645-660 (July 1991).

Stephen S. Fentress
Strasenburgh Planetarium
Rochester Museum &
Science Center
Rochester, N.Y.

Another atomic arithmetician

Walter R. Hearn traced "the origins of atomic arithmetic" (*SI*, Follow-Up, Fall 1992) back to the French scientist Louis C. Kervran some 40 years ago. Some 100 years ago the great Swedish author August Strindberg added atomic masses in his alchemical attempts to find reactions to produce gold. The whole story, including modern analysis of "gold" samples made by Strindberg, is given by George B. Kauffman in an enjoyable article (*Gold Bulletin*, 1988, 21[2], 69-75). He concludes (p. 74) about Strindberg's studies: "His undue emotional involvement and his mystical belief in analogies, correspondences, and numbers resulted in an almost complete lack of objectivity in his experiments and theories."

Seems pseudoscience hasn't changed much.

Gerhard Eggert
Rheinisches Landesmuseum
Bonn, Germany

New England vampire beliefs

I have an interesting aside to Peter Huston's review of two books on vampires in the Fall 1992 *SI*.

As a biological anthropologist specializing in the analysis of historic-period North American skeletal remains, I have been researching the beliefs in vampires among nineteenth-century New Englanders to interpret evidence from a skeleton from the period. One of 28 burials from a cemetery in Griswold, Connecticut (c. 1740-1840), that of a 50- to 55-year-old male, had been rearranged postmortem. The ribs and vertebrae were jumbled, the femora crossed on the lower thorax, and the skull was on the upper chest. Several bones show lesions probably resulting from a pulmonary infection from tuberculosis.

Historic accounts from southern New England reveal that beliefs in vampires were not uncommon in the nineteenth century. Some rural New Englanders believed that a person who recently died of consumption (tuberculosis) could cause the "wasting away" of other family members by "draining their life force" (not necessarily their blood). Such a belief is not inconsistent with the pathogenesis and epidemiology of a tuberculosis infection. To counteract this suspected slow death, the supposed vampire was killed by exhuming the body and inflicting damage upon it. I have also uncovered an account from 1854 in Jewett City, Connecticut (adjacent to Griswold), relating that the remains of two brothers who died of consumption were exhumed and burned as vampires.

Paul S. Sledzik
Curator, Anatomical Collections
Nat'l. Museum of Health
& Medicine
Armed Forces Inst. of Pathology
Washington, D.C.

A Course in Miracles

As a student of *A Course in Miracles* who has published a number of articles on its history and significance, I have some corrections and comments to offer on Martin Gardner's recent column on the *Course* (*SI*, Fall 1992).

Gardner passes on erroneous information from Esalen cofounder Michael Murphy. Asserting that *Course* scribe Helen Schucman was "brought up mystically inclined," Murphy reported that "at four she used to stand out on the balcony and say that God would give her a sign of miracles to let her know that he was there." Schucman's unpublished autobiography refers only once to such an incident in her childhood—at age 12, when she was visiting Lourdes with her family. One evening she prayed to God for the miracle sign of a shooting star, and when she opened her eyes she saw a shower of them. Schucman's adult recollection reveals that her interpretation of the incident, even as a child, was closer to that of a skeptic than to that of one mystically inclined:

I stood quite still until the stars had faded away and the sky was dark again. And then I remembered.

Our guide had told us that this was the time for meteor showers in this part of the world, and they would be coming pretty often soon. It was not really a miracle at all. . . . Perhaps, I said to myself, the water and the healings and the crutches were all like the meteor shower. People just thought they were miracles. It all could happen that way. You can get fooled so easily.

Obviously this casts an entirely different light on Schucman's complex character. In fact, Schucman prided herself on her scientific rationalism throughout her life, and that's partly why she kept the recording of the *Course* a secret from all but a few intimates. . . .

Gardner gives short shrift to the fact that Marianne Williamson, Gerald Jampolsky, Willis Harman, and other distinguished students of the *Course* have done a great deal of good work for the benefit of others, and also that many people claim to have experienced significant healings of serious psychological and even physical problems through the *Course* discipline. (I am one of them.) This is a far more significant issue than Williamson's character flaws or even Christ's alleged authorship of the *Course*. . . .

Finally, Gardner finds it "hard to believe that intelligent people could take seriously a work that is little more than a crude rehash of ideas from the old New Thought movement. . . ." It should be clearly stated that this is only Gardner's opinion of the *Course*'s composition, not a competent or objective assay of the myriad philosophical strains (including Gnosticism, kabbalism, and early or "root" Christianity) that are in fact detectible in the material.

D. Patrick Miller
Encinitas, Calif.

I was offended by Martin Gardner's article on Marianne Williamson and *A Course in Miracles*. In it, Gardner repeatedly mentions the "Jewish background" of a number of the movement's leaders. How is this relevant to his exposé? In the same issue, Gardner manages to write a perfectly good piece on Isaac Asimov without ever once mentioning his Jewish background.

In addition, Gardner's innuendo about the relationship of Thetford and Schucman, and comments regarding Williamson's and Schucman's looks, seem more appropriate to the pages of the *National Enquirer* than to those of the SKEPTICAL INQUIRER.

I thought *SI* was dedicated to critiquing people's ideas (or, in this case, the lack thereof) not to attacking their personal relationships, physical appearance, or religious upbringing.

Rabbi Jane Litman
Jewish Studies
California State University
at Northridge

Martin Gardner replies to Rabbi Litman:

The reason I mentioned the Jewish background of several true believers in the Course in Miracles *is that the* Course *pretends to have been dictated by Jesus. That anyone Jewish would relish a book written by Jesus is surely relevant. When I spoke on the phone with Helen Schucman's husband, I asked him if he believed the* Course *was dictated by Jesus. His immediate response was, "How could I? I'm Jewish."*

I also went out of my way to mention Helen's atheism and the Catholic background of one prominent promoter of the Course. *I did this because the* Course *so obviously contradicts both atheism and Catholic doctrines.*

If the Course *had not purportedly been written by Jesus it would never have occurred to me to mention the religious backgrounds of any of its followers. My wife, who is Jewish, was not in the least offended when she proofed the column. If I were to write about Christian converts to, say, Islam, would anyone fault me for mentioning that they were former Christians?*

Bruton Parish dig

It is fascinating how the same basic information may be presented in two so distinctly different ways. I refer to Robert Sheaffer's report on the controversy over an archaeological dig at Bruton Parish Church in Williamsburg, Virginia (*SI*, Psychic Vibrations, Fall 1992) and Ivor Noel Hume's "Digging at Bruton: Much Ado About Nothing?" (*Colonial Williamsburg*, Autumn 1992, pp. 16-19).

For example, Sheaffer plays up the "New Age" angle, whereas Hume addresses his readers' interest in history and colonial America. Whereas Sheaffer names the people who apparently did the illegal digging in 1991, Hume does not. On the other hand, Sheaffer gives the impression that an earlier illegal dig, carried out in 1938, netted nothing. Hume, however, notes that the 1938 dig did turn up "the remains of one of Virginia's most historic 17th-century buildings," a discovery Hume ascribes to chance. Also, Sheaffer reports that a Bruton spokesperson "notes that there was a complete excavation around the church" in 1938. But Hume's articles doesn't really bear that out. Rather, writes Hume, "on August 17 [1992] and at the vestry's invitation, Colonial Williamsburg archaeologists began [a complete] excavation."

Whether or not documents will be turned up revealing, among other things, the "real" author of Shakespeare's play, this late summer night's dream may accomplish some good. The worry is, if another chance discovery is made, will the true believers rewrite their predictions to fit the find, or will they just take the credit and run?

Monty Vierra
Fuji City, Japan

Robert Sheaffer outlined the New Age mystics' reasons for attempting to find the vault in the Bruton Parish Church's yard, and gave an account of their "mystological" evidence.

Press coverage by the *Richmond Times-Dispatch* alone amounted to at least 11 long articles, more publicity than any Virginia archaeological excavation has received. The church's purpose was "to settle the issue once and for all" and it was "pressured into the decision by groups intrigued by the story of the vault" (*Times-Dispatch*, August 16, 1992). Later, the three weeks' diggings "proved beyond reasonable doubt that there is no vault," said the rector (*Times Dispatch* September 12, 1992). Ah! but the New Age Christian mystics said, "the findings didn't shake their belief that Sir Francis Bacon's vault lies beheath the church's old foundations" (ibid.).

The New Age mystics got their publicity; so also did Bruton Parish Church, probably the unspoken aim of both, because "old age" Christians (Episcopalians) don't respect reality testing any more than "new age" Christians. The *Richmond Times-Dispatch*'s frequent coverage was consistent with talk shows and newscasts reporting psychic "happenings," a media trend of feeding "psychic" diets to Americans because their research shows "strong" interest.

C. G. Holland
Charlottesville, Va.

(See News and Comment in this issue for a follow-up.—ED)

Stunt kite 'UFO'

Robert Sheaffer's Psychic Vibrations discussion of TV's UFO flap (*SI*, Fall 1992) reminded us of an amusing experience.

We try to keep up with nonsense presented as serious stories and were watching "The UFO Report: Sightings" on the Fox network. They were talking about home video cameras capturing unexplained phenomena and showed a video of three objects floating and diving in front of mountains near Las Vegas. A voice commented on the spectacular maneuver one object was making—it

was looping as it gradually descended.

We looked at each other and said "stunt kites." There is no doubt in our minds that the objects were kites and the spectacular maneuver was being done by a stunt kite. Such kites use two to four lines for control and the loops they do are very distinctive.

The person who took the video probably was honestly puzzled by what he or she was seeing. The show's producers were obviously more interested in sensationalism than in finding a rational explanation.

Susan and Alan French
Scotia, N.Y.

CAIRP's library solicits collaborations

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Ladislao Enrique Marquez
Director, CAIRP
Buenos Aires, Argentina

A matter of degree

On page 436, right column, of *SI*, Summer 1992, I presume that Tan $\theta \times {}^1/_2$ should read Tan $\theta = {}^1/_2$.

In that case, the value of θ is 26.5651 degrees, not 23.5651 as stated.

Keep up the good work!

Jean Meeus
Erps-Kwerps, Belgium

The letters column is a forum for views on matters raised in previous issues. Brief letters (less than 250 words) are welcome. We reserve the right to edit longer ones. They should be typed double-spaced. Due to the volume of letters, not all can be published. Address them to Letters to the Editor, SKEPTICAL INQUIRER, 3025 Palo Alto Dr. NE, Albuquerque, NM 87111.

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(continued on next page)

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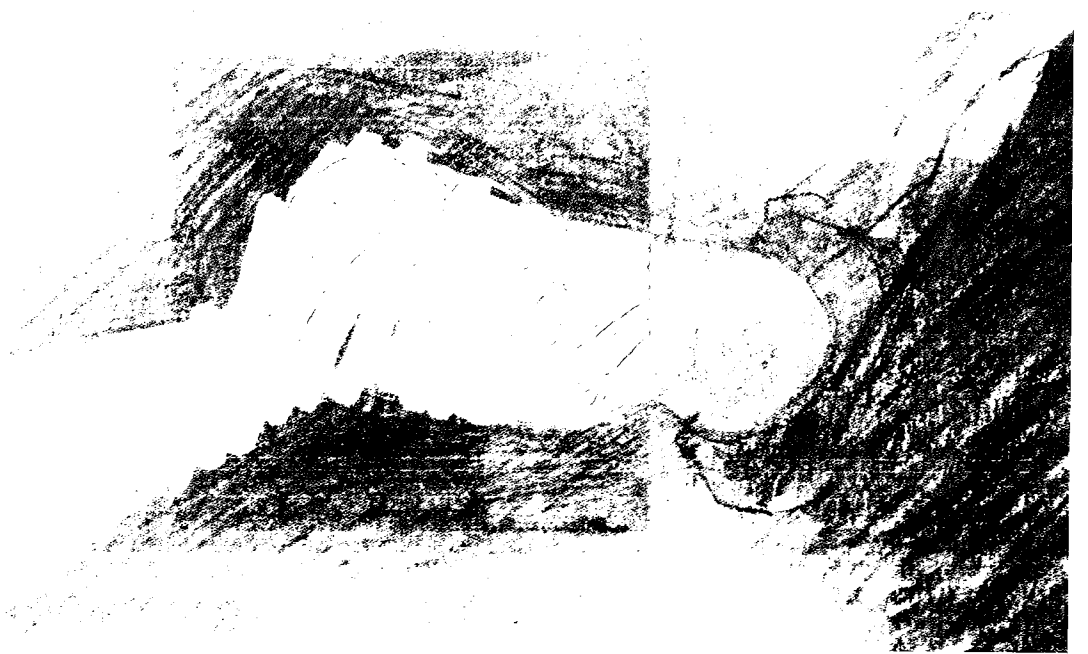
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